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HAWKISH OR DOVISH: THE EFFECT OF FEMALE CEO LEADERSHIP ON
STRATEGIC CONFORMITY, ORGANIZATIONAL INNOVATION AND
STRATEGIC CHANGE

A Dissertation

by

HAZEL HUSNE DADANLAR

Submitted to the Graduate School of
The University of Texas Rio Grande Valley
In partial fulfillment of the requirement for the degree of

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HAWKISH OR DOVISH: THE EFFECT OF FEMALE CEO LEADERSHIP ON
STRATEGIC CONFORMITY, ORGANIZATIONAL INNOVATION AND
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August 2021

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ABSTRACT

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The U.S. female labor market participation rate has significantly improved in the last 50 years (Bureau of Labor Statistics, 2007). Along with the broader female labor participation rate, the level of female representation at the executive and director-level positions has shown some improvement in the last 24 years, albeit at a much slower pace than it has been in recent years (Pew Research Center Report, 2018). For example, while the number of female Chief Executive Officers (CEOs) leading Fortune 500 companies was zero in 1995, it rose by 7.4% by 2020. Despite some improvement, a mere 7.4% increase in the last 24 years suggests that women's representation in corporate America's top leadership positions is still lagging. Given these trends, research has primarily focused on understanding the 'glass ceiling', which has been defined as the conspicuous and persistent gap in female representation in senior corporate leadership positions (Morrison, White & Van Velsor, 1987), as well as the performance consequences of female CEO appointments. Despite the important insights generated from this line of research, less is known as to whether and how female CEOs, compared to their male counterparts,

systematically differ in their choices of corporate strategies. The significance of unpacking this issue lies in the fact that female CEOs, despite holding top roles, often face a dilemma between conforming to the socially sanctioned gender roles of consensus-seeking and risk-averse leadership behavior (which I term in this study as a “dovish” posture) and demonstrating counter-stereotypical, risk-taking, and aggressive behavior (which I term in this study as a “hawkish” posture). Additionally, because the organizational socialization process for female leaders is often harsher and less supportive (McDonald, Keeves, & Westphal, 2018; Eagly, Makhijani, & Klonsky, 1992) it is reasonable to expect that the decision-making process and subsequent strategic choices may differ when a firm is run by a female CEO instead of a male CEO.

To address this research gap, I explore three research questions in this dissertation. First, drawing insights from stereotype threat (Hoyt & Murphy, 2016; Inzlicht & Schmader, 2012) and expectancy violation (Jussim, Coleman, & Lerch, 1987; Burgoon, 1985) theories, I explore whether and why female CEOs, compared to their male counterparts, initiate more firm-level strategic change (i.e., hawkish leader behavior). Additionally, to better understand the complex boundary conditions and contingencies that shape this relationship, I examine various executive, organizational, and industry-level moderators. Second, using the hawkish leader behavior perspective, I also explore whether and under what conditions female CEOs, compared to their male counterparts, pursue organizational innovation. Finally, using the tenets of socialization theory, I investigate whether and under what conditions firms led by female CEOs, compared to their male counterparts, engage in strategic conformity (a lack of deviation from an industry’s central norms) in line with my dovish leader behavior predictions. I empirically examine these

relationships using data from U.S.-based publicly traded corporations listed in the Standard & Poor's 1500 (S&P 1500) index.

The findings suggest that female CEOs, compared to their male counterparts, engage in more strategic change and less strategic conformity. Further, the relationship between female CEOs and strategic change is negatively moderated by past firm performance whereby female CEOs engage in less strategic change following strong firm performance. Additionally, the findings suggest that compared to their male counterparts, female CEOs engage in more organizational innovation (as measured in new product introductions or NPIs). Upon a closer examination of the conditions surrounding this relationship, the findings show that female CEOs launch more NPIs when there is a higher proportion of female directors on the board. Similarly, I found that the condition that affects the relationship between female CEOs and NPIs is the nature of predecessor CEO exit (i.e., voluntary vs. dismissal departure). In particular, the findings indicate that female CEO-led firms launch more NPIs when the predecessor CEO was dismissed. Furthermore, the results of a supplemental analysis reveal that female CEOs engage in more strategic change (and less strategic conformity) when they are in their later stages of tenure. In addition, female CEOs engage in less strategic change (and more strategic conformity) when the board is composed of more independent directors.

Overall, the findings in this study make a number of contributions to both research and practice. In particular, this study contributes to research on the organizational consequences of female corporate leaders by investigating whether the strategic choices of female CEOs differ significantly from their male counterparts. Further, the findings advance research in this area by specifically examining the organizational and environmental contingencies that shape female

CEOs' gender role expectations as they pertain to the choice of corporate strategies. Regardless of whether female CEOs respond to socially sanctioned gender roles in the form of conforming (i.e., dovish posture) or violating expectations (i.e., hawkish posture), their strategic choices have important implications for corporate outcomes. Thus, understanding the risk-taking (or risk-averse) behaviors of female CEOs is very important for ensuring robust corporate governance and subsequently, firm performance. Finally, the findings also provide practical insights regarding female CEOs' risk-taking behaviors in the context of their strategic choices (such as pursuing strategic change and organizational innovation). These insights are expected to help boards of directors improve the effectiveness of their oversight and advice roles, including CEO succession decisions.

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CHAPTER I

INTRODUCTION

“More women are leaning in, and we’ll all go farther when the workplace stops pushing back”

Sheryl Sandberg, Facebook COO

1.1 The State of Female Leadership in Corporate America

1.1.1 Women are in the “Spotlight”

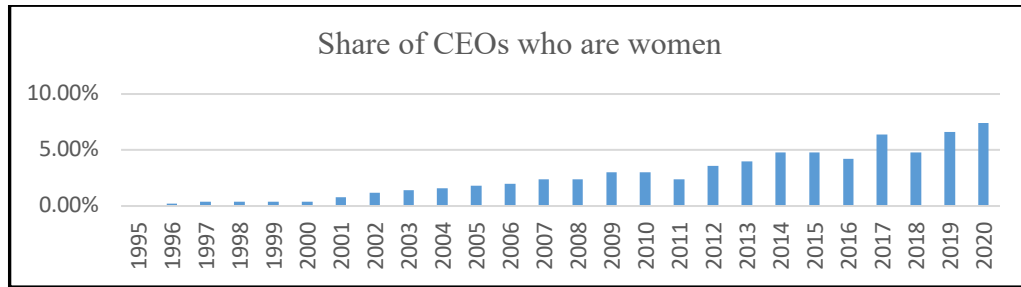
At least two major events have created a defining moment for women in recent years: #Times Up and #MeToo movements (growing social movements against sexual harassment in the workplace), and women’s growing participation in the political arena at an unprecedented rate. While the #Times Up movement points to “the struggle for women to break in, to rise up the ranks and to simply be heard and acknowledged in male dominated workplaces...” (Buckley, 2018), the #MeToo movement has brought public awareness to the prevalence of sexual violence (Hostler and O’neil, 2018). It is important to note that the #MeToo and Time’s Up movements against powerful men in politics, entertainment, and media coincided with a record number of women (309) from all walks of life running for the U.S House of Representatives in 2018- a nearly 90% increase over 2016’s numbers (Kurtzleben, 2018). According to a Pew Research survey, 61% of Americans say it’s a good thing that more women are announcing their

candidacy for a seat in U.S. Congress this year than in the past (Igielnik and Horowitz, 2018). These movements have engendered tremendous attention and reaction from the public through social media (Codrea-rado, 2017), news media outlets (Schnall, 2017), policy makers (Martin, 2018; Zernike and Steel, 2018; Papenfuss, 2018), and businesses (Malito, 2018; Petty John, Muzzey, Maas, and McCauley, 2018).

1.1.2 Gender Representation in Senior Leadership Positions: Quotas and the “Glass Ceiling” Phenomenon

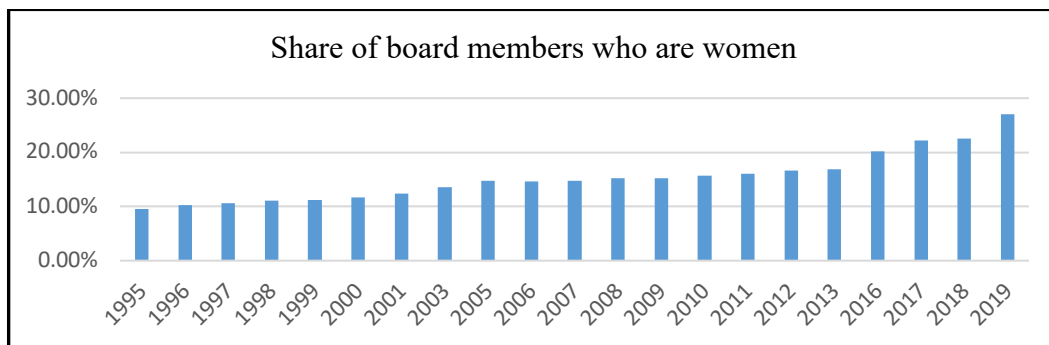
U.S. labor markets experienced a substantial rise in the number of female participations in the past 50 years, according to data from the Bureau of Labor Statistics, U.S. Department of Labor (Bureau of Labor Statistics, 2007). While the rate of female labor force participation rose from 30 % in 1950 to almost 47 % in 2000, the share of women workforce is projected to be 57 % in 2050 (Toossi, 2002). Despite the substantial spike in the overall rate of female workforce participation in the past decades, progress has been particularly meager when it comes to women’s advancement to top leadership roles in almost all major American institutions, whether it be halls of Congress, universities, courts, philanthropic associations and large corporations. (Hill, Miller, Benson and Handley, 2016). This persistent underrepresentation of women in senior leadership positions-termed a “glass ceiling”- has particularly been conspicuous in the business sector. For example, figure 1 below shows the level of female representation at the Chief Executive Officer (CEO) level in Fortune 500 companies between 1995-2020. Additionally, figure 2 below shows the level of female representation at the board of director level in Fortune 500 companies between 1995-2019.

Figure 1: Percentage of Female Fortune 500



(Source: Pew Research Center, 2021)

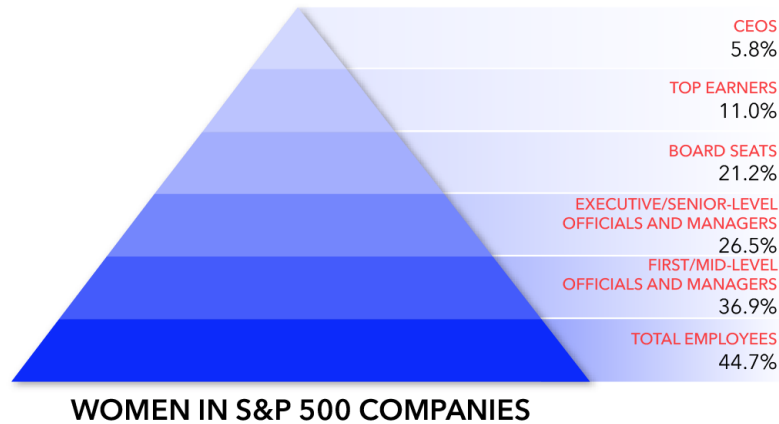
Figure 2: Percentage of Female Board of Directors



(Source: Pew Research Center, 2021)

For example, while the number of women CEOs at Fortune 500 companies was zero in 1995, a mere 7.4 % increase since then suggests that women’s advancement to top leadership positions at Corporate America is still lagging. On the other hand, the numbers look slightly more optimistic for women in corporate boards given the 17.4 % increase in the number of female directors appointed to Fortune 500 boards in the last 24 years. Such slow and meagre progress of women to the top exists against the backdrop of heightened awareness of gender inequality in workplace. Thus, as figure 1 above indicates, the share of women leaders at the top of large organizations still lags significantly behind their male counterparts in 2020.

Figure 3: Women in S&P 500 Companies



Sources

Catalyst, *Women CEOs of the S&P 500* (2020).
 EY Center for Board Matters, 2016 Top Earners in S&P 500 Companies, Unpublished data.
 Catalyst, *2016 Catalyst Census: Women and Men Board Directors* (2017).
 U.S. Equal Employment Opportunity Commission (EEOC), Unpublished 2015 S&P 500 EEO-1 data.

S&P 500 is owned by S&P Dow Jones Indices, LLC.
 Updated: 15 January 2020



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CATALYST.ORG

(Catalyst, Pyramid: Women in S&P 500 Companies (January 15, 2021))

As Figure 3 above illustrates, although women constitute 36.9 % of first-/mid-level officials and managers among S&P 500 firms, they are appointed to only 26.5 % of executive/senior-level positions and 21.2 % of board seats. More alarmingly, the share of women CEOs of S&P 500 companies barely exceeds 5 % despite the considerable “pipeline” of female managers at the senior executive and board levels. Interestingly, while the difference between the labor force participation rates of males and females has been steadily declining over the past 50 years, the decline in the gender gap in leadership roles is not following a similar trend. For example, in 2015 alone, “90 percent of the new CEOs were promoted or hired from roles with profit-and-loss responsibility, and 100 percent of them were men” (CEO & Gender: A Media Analysis, 2016). In fact, media analysis predicted that, with the current rate of change,

females will be able to reach parity with males in top leadership roles by 2085 in the U.S. (CEO & Gender: A Media Analysis, 2016).

1.1.2.1 The “glass ceiling” phenomenon. The “glass ceiling” phenomenon has attracted a great deal of attention from policy makers. In 1991, the U.S. government established a bipartisan 21 member ‘Glass Ceiling Commission’. In 1995 a report by the Commission referred to the glass ceiling as “a concept that betrays America’s most cherished principles. It is the unseen, yet un-breakable barrier that keeps minorities and women from rising to the upper rungs of the corporate ladder, regardless of their qualifications or achievements”.

Further, the term ‘glass ceiling’ first emerged in a Wall Street Journal article in 1986 and then was used by Morrison, White and Van Velsor (1987) in their book: “Breaking The Glass Ceiling: Can Women Reach The Top Of America's Largest corporations?”. Drawing from the interviews of 76 women high level managers and 22 executive level people (16 men and 6 women), Morrison et al. (1987) examined factors that helped women reach the top and the apparent barriers that seem to prevent them from assuming these positions. Morrison and her colleagues (1987) argue that aside from being an executive facing everyday challenges in their firms, being a woman executive adds additional stress to such a top role. For example, being a woman where very few women have been before can be a liability, putting extra stress on women’s shoulders. The “glass ceiling” phenomenon also helps explain the issue of gender pay disparity in which even if women hold the same job as man, they do not get the same pay. Although one would expect the gender pay disparity to get better over time, it seems to actually get worse. For example, one survey has shown that female executives, compared to their male counterparts, earned less compensation in 2000 than they earned in 1995.

1.1.2.2 The rise of gender quotas. Recent efforts to curb the adverse impact of the “glass ceiling” phenomenon have begun to focus on establishing a “quota” system that stipulates the minimum level of gender representation at senior corporate leadership positions. In 2008, Norway became the first country in the world to launch a gender quota for boards of directors, mandating listed firms select female directors to make up at least 40% of overall board representation. Following Norway’s lead, other countries such as Belgium, France and Italy have also passed similar quota laws for their listed firms (Carpenter, 2018). In 2018, California has become the first ever U.S. state to pass a law requiring firms incorporated in California (and foreign corporations headquartered in California) and listed on U.S stock exchanges to appoint at least one female director by 2019 and three, two or one female director(s) depending on the board size by 2021 (AllBusiness, 2018). Although, it is too early to measure the financial performance and other implications of such quotas, several studies, mostly using Norwegian firms, have examined the effect of a gender quota on corporate boards in various contexts (Bertrand, Black, Jensen, and Lleras-Muney, 2014; Wang and Kelan, 2013; Ahern and Dittmar, 2012). For example, while some evidence has been found that gender quotas enhance female representation at the very top of the earnings distribution and reduced the pay gap (Terjesen, Aguilera, and Lorenz, 2015; Wang and Kelan, 2013), other findings showed no evidence of change in the pay gap for females in top positions even after the full implementation of the quota requirement (Bertrand et al., 2014). In terms of firm performance implications, Ahern and Dittmar (2012), using Norwegian firms, found that the restrictions caused by the quota led to a decline in stock prices at the time of announcement of the law and a large decline in performance

(Tobin's Q) over the years. On the other hand, Dale-Olsen, Schøne, and Verner (2013) have found no significant change on firm performance following the enactment of the quota reform.

Despite these inconclusive findings on the effect of gender quotas, a debate has emerged recently in both the popular press and academia over the emergence of a 'women leadership advantage'. Eagly and Carli (2003) examined this 'women leadership advantage' phenomenon and found that females, compared to males, are more likely to lead in a style that is effective under contemporary conditions (e.g., progressive social change and modernity). Similarly, a survey by Zenger and Folkman (2012) involving 7,280 leaders and their evaluations by peers, supervisors, and direct reports, based on 16 competencies (e.g., initiative, developing others, inspiring and motivating etc.) and overall performance revealed that, at all levels, women were rated higher in 12 of the 16 competencies earning them the 'outstanding leader' category. In addition, research has examined whether a 'women leadership advantage' translates into organizational outcomes. For instance, Hoobler, Masterson, Nkomo, & Michel, (2018), using meta-analysis, examined the link between female leader representation in leadership positions and firm performance- commonly referred as the "business case" for women's leadership. The authors found that female CEOs are more likely to be positively associated with firm performance in more gender egalitarian cultures.

Beyond the 'women leadership advantage' and 'business case for women leaders' arguments, why does gender parity matter at the top of (large) corporations? First of all, achieving gender parity in leadership roles is a matter of equity (Hill et al., 2016) as the systemic denial of women's access to top leadership roles despite their qualifications is simply unfair. Second and more importantly, because corporations have gained substantial influence and

power¹ following the industrial revolution, they are said to shape the political, economic and social system, particularly in the U.S. Consequently, as the policy and strategy makers of these large companies, their leaders (i.e., CEOs, directors, etc.) wield a great deal of power. As such, excluding women from top leadership roles and hampering their success in these roles translates into denying them the power to potentially influence many aspects of corporate policies and practices (e.g., strategic choices, firm performance, employee well-being and empowerment, diversity climate), and thus the society overall (e.g., corporate social responsibility, climate change, etc.).

1.1.3 Women Leaders, “Glass Cliff” Phenomenon and Firm Performance

While there has been much focus on exploring the barriers, women face in landing top corporate leadership roles, there is also the “glass ceiling” phenomenon, and the question of what happens once women ‘climb the corporate ladder’ and land these top leadership roles. To answer this question, Ryan and Haslam (2005) investigated the hypothesis that “while women are now achieving more high-profile positions, they are more likely than men to find themselves on a ‘glass cliff’, such that their positions are risky or precarious” (p. 81). The results from the analysis of performance of FTSE 100 companies (prior and subsequent to the appointment of a man or woman director) showed that “during a period of overall stock-market decline those companies that appointed women to their boards were more likely to have experienced consistently bad performance in the preceding five months than those who appointed men” (Ryan and Haslam, 2005, p. 81). Similarly, Cook and Glass (2014), consistent with the “glass

¹ In the 1886 case of *Santa Clara County v. Southern Pac. R. Co.*, 118 U.S. 394 (1886), corporations were given a massive boost in their power by the U.S. Supreme Court, which recognized corporations as a “natural person” under the Fourteenth Amendment of the Constitution without argument on the point.

cliff’ theory, empirically examined this phenomenon arguing that “occupational minorities—defined as white women and men and women of color—are more likely than white men to be promoted CEO of weakly performing firms” (p. 1081). Their analysis of data from CEO appointments in Fortune 500 firms over a 15-year period showed no significant differences in the length of tenure between occupational minorities and Caucasian CEOs, however when a company’s performance declines during the tenure of occupational minority CEOs, occupational minorities are more likely to be replaced by Caucasian male CEOs (termed “savior effect”). In a similar study, Glass and Cook (2016), using matched data from Fortune 500 CEOs’ career trajectories and in-depth interviews with female executives in a variety of industry sectors, observed that women are more likely than men to be appointed to high-risk leadership roles and mostly lack the support or authority necessary to achieve their strategic goals. Some authors argue that the appointment of a female leader in times of crisis or poor performance could be seen as a corporate strategy that is adopted to signal to the shareholders that “radical change is on the way” (Ryan and Haslam, 2005, p.87).

1.1.4 Beyond “Glass Ceiling” and “Glass Cliff”

Although scholarly works on the “glass ceiling” and “glass cliff” phenomena provide very important insights on circumstances surrounding female leadership in corporate America, not much is known about the female leaders’ decision-making process. It is possible that factors leading to the ‘glass cliff’ phenomenon could be by-products of the perceived effectiveness of female leaders. Thus, exploring how and under what conditions female leaders, compared to their male counterparts, make certain strategic choices is very important as these choices not only shape the performance and direction of the firm but also provide insights into their strategic

decision-making. In this dissertation, I investigate the relationship between female CEO leadership and their choice of three major corporate strategies: strategic change, strategic conformity and organizational innovation, and whether these relationships are further influenced by executive, organizational, and industry contingencies.

1.2 Statement of the Problem

1.2.1 What do we know so far about female leaders in the upper echelons?

Gender is an integral part of organizational processes, and it can only be understood by a more critical and multifaceted examination (West and Zimmerman, 1987). As the share of women at the executive and board of director level increases (Costigan, Beninger and Pappas, 2018), it has become critical to understand how female leaders influence corporate strategies (Chapman, 1975; Eagly and Wood, 1991; Eagly, Karau and Makhijani, 1995; Joshi, Son and Roh, 2015). So far, scholars from different disciplines have examined the following issues surrounding female leader appointments:

1.2.1.1 Antecedents of female leader appointments. Many of the studies of female corporate leaders focused on the factors predicting the appointment of female executives and directors (e.g., Dwivedi, Joshi, and Misangyi, 2017; Brands and Fernandez-Mateo, 2016; Seierstad, 2016; Kogut, Colomer, and Belinky, 2014; Elsaid and Ursel, 2011; Cohen and Broschak, 2013; Hillman, Shropshire, and Cannella Jr., 2007; Daily, Certo, and Dalton, 1999). For example, Daily et al. (1999) suggested that the ‘glass ceiling’ has been circumvented in the previous decade (1987- 1999) as firms realize the business case for women’s representation in top roles and argued that there would be dramatic increases in female representation both in boards and C-suites. However, their results showed that while there were dramatic increases in

female board representation, no evidence of progress was found for female CEO representation. Also, Elsaid and Ursel (2011), using data on 679 CEO successions, found that successor CEOs are more likely to be female when there is a greater percentage of females on the boards. Another study by Hillman et al. (2007) examined the organizational predictors of female director appointments. Using data from 1,000 of the largest U.S. firms, they found that the likelihood of female representation on boards of directors was predicted by organizational size, industry type, firm diversification strategy, and network effects (linkages to other boards with women directors).

1.2.1.2 Performance implications of female leadership. Another notable research stream that received tremendous traction from scholars in various disciplines is the consequences of female leadership (e.g., Adams and Funk, 2012; Kang, Ding and Charoenwong, 2010; Dezsö and Ross, 2012; Lee and James, 2007; Rose, 2007). For example, Lee and James (2007) found that investors reacted to the announcements of female CEOs significantly more negatively compared to their male counterparts. On the other hand, Kang et al. (2010) have found that investors generally respond positively to the appointment of women directors in Singaporean firms. Regarding the firm performance implications of female leaders, while several scholars found no significant link between firm performance as measured by Tobin's Q and female board representation (Rose, 2007), others have found that female representation in top management improves firm performance (Dezsö and Ross, 2012).

1.2.2 What's missing in the conversation?

In this section, I explain what is missing from the conversation in female leadership and organizational outcomes research. Specifically, I provide a brief discussion of whether female

leaders (in this case CEOs) make better or different strategic decisions and how their risk-taking behaviors differ from their male counterparts.

1.2.3 Do female leaders (in this case ceos) make better or different strategic decisions?

Although scholars from numerous disciplines have examined female leadership in various contexts, there is hardly any consensus as to whether female CEOs' choices of corporate strategies might vary compared to their male counterparts (e.g., Eagly and Johannesen-Schmidt, 2001). Most of the debate around female leadership has focused on whether males are different from or similar to their female counterparts. As expected, this focus has received some criticism from feminist scholars (Acker, 1990; Kimball, Cole and Rothblum, 1995). Thus, I aim to go beyond the commonly explored dichotomy between similarity and difference by exploring whether and how gender differences in leaders' behaviors and decision-making are present, emerging or disappearing depending on the changes in the organizational and socialization contexts. One of the research streams that has been understudied is female CEOs' strategic decision-making and whether and how it is different from their male counterparts' decision-making. Research to date has examined female CEOs' decision-making style in terms of risk-taking attitudes toward firm strategies and outcomes (Faccio, Marchica, and Mura, 2016; Khan, and Vieito, 2013; Elsaid and Ursel, 2011) in various contexts, firm valuation (Jeong and Harrison, 2017; Martin, Nishikawa, and Williams, 2009), capital allocation (Faccio et al., 2016), accounting conservatism (Ho, Li, Tam, and Zhang, 2015), and market orientation (Davis, Babakus, Englis, and Pett, 2010). The findings as to whether and how female CEOs' decision-making is different from male CEOs' is mixed. I discuss this important issue in greater detail in the literature review section.

1.2.4 Do female CEOs embrace risk-taking or risk-averse behaviors? Which organizational contexts are missing in the literature?

The research on gender differences in terms of risk-taking behavior (at the corporate decision-making level) has been mostly built upon empirical evidence drawn from the lay population (and occasionally managers). Also, the literature has been using social role theory (Eagly, 1987; Eagly & Wood, 1991) and evolutionary psychology (Eagly, 1997) to explain the gender differences of risk-taking behavior and cited the descriptive and prescriptive roles women are expected to display in society and in organizational settings. For example, Byrnes et al. (1999) meta-analysis of 150 studies comparing the risk-taking behavior of women and men may provide further insights into this much-debated subject. The authors found that certain subjects, such as physical skills and intellectual risk-taking, generated larger gender differences than others (i.e., smoking). To further determine the complex relationship between gender and risk-taking behavior, several studies shifted gears toward a different context: financial decision-making. For example, Powell and Ansic (1997) found that women are less risk-seeking compared to men, even after controlling for framing, costs, and ambiguity. The authors further suggested that women and men differ in their strategy-making in financial situations. Similarly, Jianakoplos & Bernasek (1998) examined whether women show more financial risk-aversion than men do. Using a U. S. sample, the authors examined household holdings of risky assets (e.g., stock, real estate, trust holdings) and found that single women are significantly more risk-averse in financial decision making than single men, and the difference is influenced by the amount of wealth held, age, race and the number of children. The findings of this study show that contextual factors are important determinants in unpacking gender differences in risk-taking behaviors. For example, Adhikari and O’Leary (2012) examined whether female employees of

the Nepalese banking sector are more risk-averse than their male counterparts. The results of the study show that female employees take less risk and invest less of their wealth in risk-laden assets compared to males. However, this observed difference diminished after controlling for women's perceived knowledge of financial markets, meaning that women's risk aversion can be contingent upon some relevant factors. However, given all the work discussed above study participants from the lay population (e.g., household members, students, tournament participants, etc.), can their findings apply to individuals who hold leadership roles such as managers, senior executives, Chief Executive Officers (CEOs), and corporate directors? The literature on this question provides mixed results. For example, Graham, Harvey & Puri (2013) found that CEOs appeared to be more risk-tolerant and optimistic in their decisions than the lay population of the same age profile. Johnson and Powell (1994) compared betting decisions of non-managers (men and women) and managers (men and women) on the horse and dog races at 50 betting sites in the United Kingdom over a one-week window. The authors found that while non-manager men were significantly more risk-tolerant than non-manager women in their betting behaviors, the women and men managers exhibited similar risk-taking behavior.

The literature mostly confirms the common notion that female leaders are more risk-averse than male leaders are (Huang and Kisgen, 2013; Levi et al., 2014; Faccio et al., 2016). However, it pays little attention to theorizing the underlying factors of gender differences in risk-taking behavior at the managerial level. Several gender studies and leadership scholars have denounced the social role theory explanations of gender and risk-taking behavior. They argue that using this theory is simplistic in addressing such a complex relationship (Vecchio, 2002;

Eagly & Carli, 2003a, 2003b) and suggested researchers explore important contextual contingencies around gender and leadership.

The decision-making process female leaders follow when deliberating risk-laden corporate strategies has been understudied by management scholars. The studies to date have mainly focused on the impact of gender-based risk-taking behavior in financial and accounting contexts (Schubert et al., 1999; Byrnes, Miller and Schafer, 1999; Barber and Odean, 2001; Charness and Gneezy, 2012; Faccio et al., 2014; Perryman, Fernando and Tripathy, 2016) rather than on corporate strategic choices, save for Levi, Li, and Zhang's (2014) study focusing on mergers and acquisitions (M&As). In addition, the research on gender-based risk-taking behavior documents mixed findings. For example, several studies found that female executives are more risk-averse compared to their male counterparts (Huang and Kisgen, 2013; Khan and Vieito, 2013; Levi et al., 2014) while others found that female executives are not risk-averse and they display similar risk-taking behaviors compared to male CEOs (Adams and Funk, 2012; Berger, Kick and Schaeck, 2014). Finally, although the scholarly work addressing female CEOs' risk-taking behavior in various organizational domains is valuable, these works fell short in unpacking this dynamic relationship. Specifically, they often emphasize whether sex differences in risk-taking behavior exist rather than exploring how and based on what contingencies such differences generate unique outcomes for organizations. Second, although scholarly works on the financial performance consequences of female executive leadership have increased in recent years, the link between female CEOs and specific strategic choices such as strategic change, strategic conformity, and corporate innovation remains understudied. Thus, it

is essential to understand the role female CEOs play in initiating these strategies while ruminating gender and organizational contexts.

1.3 Dissertation Objectives and Research Questions

In this dissertation, I examine whether and under what conditions female CEOs differ from their male counterparts in their strategic choices. I explore the possibility that female CEOs are more inclined to pursue aggressive strategic actions- as opposed to risk-averse ones- in the form of strategic change and organizational innovation, thereby adopting a more “hawkish” posture. I further examine boundary conditions that shape this relationship by incorporating a number of executive, organizational and industry level contextual factors. Alternatively, based on the extensive research on socialization theory that highlights the demands on female leaders to “fit in”, I investigate the propensity and conditions under which female CEOs, compared to their male counterparts, engage more in strategic conformity (absence of deviation from an industry’s central norms). In doing so, I examine the notion that female CEOs emphasize less aggressive corporate strategies that conform to stakeholders’ expectations (hence a “dovish” posture). Accordingly, I focus on the following research questions in this dissertation:

1. Do female CEOs, compared to their male-counterparts, engage more in strategic change?
2. If so, what are some of the executive, organizational and industry level contextual factors that moderate the relationship between female CEOs and strategic change?
3. Do female CEOs, compared to their male-counterparts, engage more in organizational innovation?

4. If so, what are some of the executive, organizational and industry level contextual factors that moderate the relationship between female CEOs and organizational innovation?
5. Do female CEOs, compared to their male-counterparts, engage more in strategic conformity?
6. If so, what are some of the executive, organizational and industry level contextual factors that moderate the relationship between female CEOs and strategic conformity?

1.4 Scope of the Dissertation

My main goal in this dissertation is to examine female CEOs' strategic choices and the various executive, organizational, and industry level contingencies that influence these choices. Although it is reasonable to expect that the corporate strategies I investigate in this dissertation ultimately impact a firm's financial performance, my primary focus is not to study the direct effect of female CEO leadership on firms' financial performance. Furthermore, given the research questions I am interested in, this dissertation does not primarily focus on female top management teams or boards of directors.

1.5 Contributions of the Dissertation

1.5.1 Contributions to Research

Given that I explore female CEOs' strategic choices, the findings of this dissertation are expected to contribute to two research streams. First, despite many scholarly works on the consequences of female leadership, the risk-taking or risk-averse behaviors of female CEOs has been understudied. In the few works that examined this issue, the proposed relationship between

the risk propensity of female leaders and corporate outcomes are theorized based on socially constructed gender roles that suggest women are in general more risk-averse compared to their male counterparts (Kulich, Trojanowski, Ryan, Haslam and Renneboog, 2011; Charness and Gneezy, 2012; Faccio et al., 2014). Although it is hard to escape the socially constructed gender role expectations female leaders face, even in the C-suit, it is critical to vigilantly unpack the issue based on gender role expectation contingencies and how female leaders respond to them when selecting corporate strategies. In the absence of a unifying theory explaining the differences between female and male CEO decision-making, I argue that stereotype threat (Hoyt and Murphy, 2016; Inzlicht and Schmader, 2012) and expectancy violation theories (Jussim, Coleman, and Lerch, 1987; Burgoon, 1985) can explain female CEOs' attitudes toward risky corporate strategies such as strategic change and innovation. Similarly, I propose that socialization and stereotype threat theories inform our understanding of female CEOs' choices of relatively less risky corporate strategies such as strategic conformity. I seek to extend the upper echelons and corporate governance research by integrating these related theories and offer contingencies in which female CEOs not only manage gender role expectations and socialize into the organization, but also assert themselves as "strong leaders" by pursuing risk-laden corporate strategies. Such a theoretical explanation is not only distinct from and novel to the extant research, but it also incorporates a new perspective to the complex issue of gender representation in organizations.

Second, although there have been many studies that examined the relationship between corporate leaders and firm strategic choices such as strategic change (e.g. Westphal and Fredrickson, 2001), strategic conformity (e.g. Tang, Crossan and Rowe, 2011; Westphal and

Bednar, 2005) and organizational innovation (e.g. Makri and Scandura, 2010), to date, the literature (in finance, management, social-psychology, and gender studies) is missing the link between female CEO presence and these corporate strategic choices. Thus, I believe this dissertation contributes to the strategic change, strategic conformity, and organizational innovation research domains by exploring why female leaders are more inclined to pursue these strategies.

1.5.2 Contributions to Practice

In addition to the scholarly contributions, this dissertation provides several practical implications. First, understanding the risk-taking behaviors of female CEOs is very important for effectively managing both succession and post-succession events for corporations. Armed with the findings in this dissertation, boards of directors and shareholders of large corporations can make more informed decisions in their deliberations pertaining to CEO selection. Further, gaining insights into the risk-taking behaviors of female CEOs when they involve risk-laden corporate strategies such as strategic change and corporate innovation will help boards of directors adjust their monitoring and advice roles. Also, the mitigating and facilitating conditions (i.e., proportion of female directors, industry dynamism etc.) around female CEOs' strategy making in these organizational contexts provide invaluable insights in understanding the socio-psychological dynamics of corporate leaders.

1.6 Key Terms and Definitions

In this section, I provide a brief definition of the major variables and concepts of the dissertation:

- Strategic Change: Strategic change is defined as “the variation over time in a firm’s pattern of resource allocation in key strategic dimensions that goes beyond industry-wide changes in these dimensions” (Zhang and Rajagopalan, 2010, p. 335).
- Strategic Conformity: “Strategic conformity is the degree to which the firm's business strategy profile adheres to central tendencies of the industry” (Geletkanycz and Hambrick, 1997, p.666).
- Organizational Innovation: “The adoption of innovations is conceived to encompass the generation, development, and implementation of new ideas or behaviors” (Damanpour, 1991, p. 556). At the organizational level, “an innovation can be a new product or service, a new production process technology, a new structure or administrative system, or a new plan or program pertaining to organizational members” (Damanpour, 1991, p. 556).
- R&D Intensity: R&D Intensity is defined as a firm’s spending on research and development activities divided by its sales (Hambrick and MacMillan, 1985).
- New Product Introduction: Li, Maggitti, Smith, Tesluk, and Katila (2013, p. 901) measure new product introduction as “the total number of new product introductions for each firm” during the sample window.
- CEO Outsiderness: Defined as a “...CEO who had firm tenure of less than 2 years when he or she assumed the CEO position” (Zhang, 2006, p. 291)
- Industry Dynamism: “Dynamism should be restricted to change that is hard to predict and that heightens uncertainty for key organizational members” (Dess and Beard, 1984, p.56). Dynamic industries are characterized as complex, unpredictable, and heterogeneous, creating

hyper-competition among firms, which makes it difficult for firm leaders to pursue growth opportunities (Gavetti, Levinthal, and Rivkin, 2005; D'Aveni, 1994; Wiggins and Ruefli, 2005).

1.7 Organization of the Dissertation

The rest of the dissertation is organized as follows: In chapter 2, I first present a comprehensive literature review covering firm performance implications of female leaders. Then, a cross-disciplinary review including studies from finance and economics, sociology and psychology, gender studies, and management research on the appointment and implications of female leaders is presented. Further, I provide a discussion of female leaders and strategic decision-making drawing from various studies in different research fields. Finally, I conclude the literature review section with a review of the implications of strategic change, conformity, and organizational innovation.

In chapter 3, I first discuss how stereotype threat, expectancy violation and socialization theories can inform female CEOs' strategic choices. Then I present the research model and hypotheses including the contingency variables that moderate the proposed relationships. Finally, in chapter 4, I provide a discussion of the sample and data sources, measures, and the analytical approach that are adopted in empirically testing the hypotheses.

CHAPTER II

LITERATURE REVIEW

In this chapter, I provide a comprehensive overview of the theoretical and empirical research that has examined the various organizational outcomes associated with female leaders. Although research has explored various antecedents and consequences of female leaders, discussion of the firm performance implications of female leadership-or as it is commonly referred to as the 'business case' for diversity (Owen and Temesvary, 2018; Robinson and Dechant, 1997)-has gained much traction from scholars in several disciplines, along with the media, practitioners, and policy makers. Thus, in the first section of this chapter, I present the extant (cross disciplinary) literature on female leaders and firm performance. In the second section, I provide a cross-disciplinary review of the literature focusing on the appointment of and implications for female leaders through summarizing studies conducted in finance, economics, sociology, psychology, gender studies, and management fields. Finally, I conclude the literature review with a discussion of female leaders' strategic choices, leading to the next chapter (theory section and hypotheses).

2.1 Female Leaders and Firm Performance

With the growing number of female directors and CEOs, scholars from different disciplines have started examining whether and how female leaders affect firm performance. Despite the diverse research settings, unit of analyses, sample sizes, theoretical perspectives and analytical methods, research evidence on female leaders' influence on firm performance remains inconclusive. Specifically, drawing from social identity theory (Krishnan and Park, 2005), the resource-based view (Shrader, Blackburn, and Iles, 1997), gender and risk-taking research (Khan and Vieito, 2013), liberal and social feminist theory (Robb and Watson, 2012), tokenism theory (Wachudi and Mboya, 2012), resource-dependence and agency theories (Carter, D'Souza, Simkins, and Simpson, 2010), and research in gender studies (Rose, 2007; Farrell, and Hersch, 2005), various scholars have found no significant relationship between women leaders and firm performance. Contrarily, other studies have found a negative relationship between women representation on boards or in top management teams (TMTs) and firm performance, finding that firms with greater numbers of female directors experience decreased accounting returns (Darmadi, 2011; Mínguez-Vera and Martín, 2011; Adams and Ferreira, 2009), lower gross revenue (Khalife and Chalouhi, 2013), and negative stock market reactions (Ryan and Haslam; 2005; Lee and James, 2005; Bøhren and Strøm, 2007).

The above findings notwithstanding, a majority of research in this area has found that female representation in TMTs and/or boards has a positive impact on firm performance. For example, past research examining the effect of gender diversity on firm performance has found that female board representation improves shareholder value (Campbell and Mínguez-Vera, 2008; Nguyen and Faff, 2007), accounting returns (Post and Byron, 2015), return on equity

(Low, Roberts, and Whiting, 2015), and overall firm performance (Conyon and He, 2017; Miller and Triana, 2009; Singh, Vinnicombe, and Johnson, 2001). Further, several recent studies, after accounting for reverse causality and endogeneity issues, provide robust empirical evidence of a positive relationship between female director representation and firm performance (Bennouri, Chtioui, Nagati, and Nekhili, 2018; Green and Homroy, 2018; Chen, Leung and Evans, 2018). In addition, a number of studies have examined whether there is a certain threshold at which female director representation begins to impact firm performance. These studies have found that the effect of board gender diversity emerges only after a board reaches a critical mass (3 or more) of female directors (Owen and Temesvary, 2018; Liu, Wei and Xie, 2014; Joecks, Pull and Vetter, 2013). A small number of studies have examined firm performance differences among female versus male-owned businesses (e.g., Welsh, Kaciak and Shamah, 2018; Mahmood and Hanafi, 2013). For example, Welsh et al. (2018) examined the antecedents of firm performance for female entrepreneurs in an emerging economy (Egypt) affected by a turbulent political and socio-cultural environment. Drawing from resource-based and institutional theories, Welsh et al. (2018) found that there is a positive relationship between female entrepreneurs with strong human capital and firm performance. However, the authors did not detect any significant relationship between female entrepreneurs' social capital and firm performance. Similarly, Mahmood and Hanafi (2013), drawing from resource-based theory, have found a significant relationship between women's entrepreneurial orientation and performance of SMEs. Here, it is important to note that although literature has documented a similar relationship between male entrepreneurs and firm performance, the focus of this section is on firm performance implications of female entrepreneurs.

Additionally, some scholars in the economics literature have examined the link between female CEOs, top executive leadership and firm performance. For example, Wolfers (2006), using S&P 1500 firms over the period 1992-2004, found that there are no systematic differences in stock returns between male and female-led firms. Similarly, Brinkhuis and Scholtens (2018), drawing from efficient market theory, examined whether and how institutional investors react to the appointments of female CEOs and CFOs. Using a sample of 100 announcements of top executive appointments of women who replaced men, Brinkhuis and Scholtens (2018) found that investors do not seem to value the appointments of female CEOs and CFOs significantly differently from those of males. On the other hand, Krishnan and Park (2005), using social identity theory, found that the proportion of women in TMTs is positively related to firm performance. Similarly, Dezso and Ross (2012) using upper echelon theory and a sample of 212 top female executives, have shown that female executives in top management improves firm performance to the extent that a firm's strategy is focused on innovation. Likewise, Perryman, Fernando, and Tripathy (2016), using a sample of 2,566 firms, have shown that firms with greater gender diversity in TMTs face lower risks and generate better performance. A study by Amore and Garofalo (2016), using competitive pressure as a context, has found that under lower competitive pressures, banks with female executives outperform banks with all-male executives, however, when competitive pressures increase, banks with female executives tend to experience lower performance. Further, Amore and Garofalo (2016) interpret their findings pointing to a trade-off, that while female executives bring about better bank stability but lower returns in more competitive environments, male executives appear to improve financial performance, but exacerbate the firm risk-taking. Finally, some scholars have argued that CEO gender has

consequences for firm performance, some finding that female CEOs were slightly better than their male counterparts in generating financial performance (Davis, Babakus, Englis, and Pett, 2010), though others have found limited evidence of a CEO gender-firm performance link (Lam, McGuinness, and Vieito, 2013).

Despite the above inconclusive findings, I propose that scholars should consider results with caution as the presence of a “glass cliff” (Glass and Cook, 2016; Cook and Glass, 2014; Ryan and Haslam, 2005) and negative shareholder perceptions of female CEOs could play a major role in affecting how women manage such precarious and risk-laden leadership positions. For example, Kolev (2012), using 49,1375 firm-year observations for a 20-year period, has found that female CEOs underperform their male counterparts in terms of shareholders’ returns by roughly 0.35% per month. However, he further interpreted the findings by referencing potential circularity in the results that shareholder returns are not independent of shareholder beliefs and if shareholders believe that female CEOs are less effective than their male-counterparts (Lee and James, 2007) such beliefs may create a self-fulfilling prophecy. Similarly, Ryan and Haslam (2005) further argue that elimination of the “glass cliff” and other gender-related barriers are contingent upon the “capacity for disadvantaged groups to overcome resistance on the part of those who are motivated to maintain the status quo”. Thus, I believe that exploring the contexts in which women leaders overcome or reinforce gender stereotypical behaviors and perceptions in their strategic choices is essential.

Table 1: Female CEO Leadership and Firm Performance

Author(s) and Year	Theory Used	Unit of Analysis	Context	Sample Used	Findings
Shrader, Blackburn, and Iles (1997)	Resource-based view	Women managers	Firm performance	200 firms	There is no significant positive relationship between women managers and firm performance.
Singh, Vinnicombe, and Johnson (2001)	N/A	Female directors	Firm performance	FTSE 100 U.K firms	Greater diversity on corporate boards could improve overall performance.
Farrell and Hersch (2005)	N/A	Female directors	Firm performance	300, 291, and 266 firms in 1997, 1998, and 1999	The relationship between abnormal returns and the announcement of a woman being added to the board is non-significant.
Ryan and Haslam (2005)	N/A	Female directors	Firm performance and Stock market reaction	FTSE 100	Firms that appoint women to their boards are more likely to face overall stock-market decline and experience consistently bad performance in the preceding five months than those that appoint men.
Krishnan and Park (2005)	Social identity theory, Power, and Market incentive perspective	Female executives	Firm performance	679 firms	Proportion of women on TMT is positively related to the organizational performance.
Wolfers (2006)	N/A	Female CEOs	Stock returns	S&P 1500 firms over the period 1992-	There are no systematic differences in returns to holding stock in female-led firms.

				2004	
Bøhren and Strøm (2007)	Agency theory	CEOs and directors	Value creation	Ranging from 129 to 203 firms during sample window	Greater diversity in terms of better gender mix, larger board size, and more employee directors are associated with lower value creation.
Nguyen and Faff (2007)	N/A	Female directors	Firm value	832 firm-year observations (Australian firms)	Gender diversity increases shareholders' value as the women director representation is associated with higher firm value.
Campbell and Mínguez-Vera (2008)	N/A	Female directors	Firm value and stock market reaction	68 Spanish companies	Gender diversity has a positive effect on firm value (stock market reaction).
Miller and Triana (2009)	Signaling theory and the behavioral theory of the firm	Female and ethnic directors	Firm performance and innovation	Fortune 500 firms	Reputation and innovation both partially mediate the relationship between board racial diversity and firm performance. There is a positive relationship between board gender diversity and innovation.
Adams and Ferreira (2009)	Principal agent theory	Female directors	Market valuation and operating performance	7,354 directorships observations	The average effect of gender diversity on both market valuation and operating performance appears to be negative when there are greater shareholder rights and positive when shareholder rights are weak.

Kang, Ding, and Charoenwong (2010)	Gender diversity research	Female directors	Investor reaction to female directors	261 firms in Singapore	Singaporean firms' shareholders generally react positively to the female director appointments.
Davis, Babakus, Englis, and Pett (2010)	Upper echelon theory	Top managers	Market performance and firm performance	212 top managers	Female CEOs are slightly better than their male counterparts in directing market performance into financial performance.
Carter, D'Souza, Simkins and Simpson (2010)	Resource dependence theory, Human capital theory, Agency theory, and Social psychology research	Female and ethnic directors	Firm performance	S&P 500 firms	There is no significant relationship between the gender or ethnic diversity of a board or important board committees, and financial performance.
Darmadi (2011)	Organization theory	Female directors	Firm performance	169 Indonesian firms	Both accounting and market performance have significant negative associations with gender diversity.
Dezso and Ross (2012)	Organization theory, Upper echelons, and Gender in organizations	Female executives	Firm performance	S&P 1,500 firms	Female presence in top management teams improves firm performance to the extent that a firm's strategy is focused on innovation.
Wachudi and Mboya (2012)	Theory of tokenism	Female directors	Firm performance	44 Kenyan banks	Board diversity has no effect on performance of banks in Kenya (boards of commercial banks in Kenya are male dominated-a typical board size of 8 members includes only one female director).

Kolev (2012)	N/A	Female CEOs	Shareholders' returns	49,1375 firm-year observations for 20-year period	Female CEOs underperform their male counterparts in terms of shareholders' returns by roughly 0.35% per month.
Robb and Watson (2012)	Liberal and social feminist theory	Female vs male owned firms	Firm performance	4000 new ventures	There is no significant performance difference between female and male-owned new ventures.
Joecks, Pull, and Vetter (2013)	Critical mass theory	Female directors	Firm performance	151 listed German firms	Gender diversity is positively related to firm performance only after board reaches a critical mass of female directors (3 or more).
Khan and Vieito, (2013)	Gender and risk-taking research	Female CEOs	Firm performance and compensation packages	S&P 1500 firms	Gender of a CEO has no effect on firm performance, however firm's risk level decreases when the CEO is a female than a male one.
Lam, McGuinness, and Vieito (2013)	N/A	Female CEOs	Firm performance	10,000 firm-year observation	There is a limited evidence for the relationship between CEO gender and firm performance.
Mahmood and Hanafi (2013)	Resource-based theory	Women owner/managers of SMEs	Firm performance	165 owners	There is a significant relationship between women's entrepreneurial orientation and performance of SMEs.
Khalife and Chalouhi (2013)	Human capital	Female and male owned firms	Gross revenue	30 Lebanese firms (18 male-owned and 12 female-owned firms)	In Lebanon, female-owned small firms are positively correlated with lower gross revenue compared to male-owned small firms.

Liu, Wei, and Xie (2014)	Agency theory, tokenism view, sex role stereotypes	Female directors	Firm performance	2000 Chinese firms	The effect of female directors on firm performance is significant in legal person-controlled firms but non-significant in state-controlled firms and boards with three or more female directors have a stronger impact on firm performance than boards with two or fewer female directors.
Post and Byron (2015)	Upper echelons theory	Female directors	Firm performance	140 studies	Female board presence is positively related to accounting returns and this relationship is stronger in countries with greater shareholder protections.
Low, Roberts, and Whiting (2015)	Tokenism theory and gender stereotype threat theory	Female directors	Firm performance-(ROE)	5503 firms from Hong Kong, South Korea, Malaysia and Singapore	Greater numbers of female directors on a board have a positive effect on firm performance (measured by return on equity). However, the positive effect of board gender diversity on firm performance appears to be diminished in countries with greater female economic participation and empowerment.
Amore and Garofalo (2016)	N/A	Executives	Firm performance and competitive pressures	100 banks between 1994 and 2006	Banks with female executives experience significantly higher financial performance under low competition. However, they tend to underperform when competition increases.

Conyon and He (2017)	Threat-rigidity theory	Female directors	Firm performance	3000 US firms	The presence of women on a board has a positive effect on firm performance. However, this effect varies at different parts of the performance distribution.
Hoobler, Masterson, Nkomo, and Michel (2018)	Critical mass theory, social identity theory, and upper echelons theory	Multilevel	Female leadership and firm performance	117,639 organizations	The presence of a female CEO is more likely to be positively related to firms' financial performance in more gender egalitarian cultures. Females' leadership may affect firm performance in general and sales performance in particular.
Welsh, Kaciak and Shamah (2018)	Resource-based and institutional-based views	Women entrepreneurs (with leadership role)	Firm performance	117 participants	Study finds a positive relationship between women entrepreneurs' human capital and firm performance.
Bennouri, Chtioui, Nagati, and Nekhili (2018)	Resource dependence theory	Female directors	Accounting performance	394 French firms	There is a positive relationship between accounting performance and female director representations on boards.
Green and Homroy (2018)	N/A	Female directors	Firm performance	100 EuroTop firms	Study finds that female board representation has a robust positive effect on firm performance.
Owen and Temesvary (2018)	N/A	Female directors	Firm performance	90 U.S. bank holding companies	Female director representation has a positive effect on firm performance when a threshold level of gender diversity is achieved. Furthermore, this positive effect is only observed in

					better capitalized banks.
Chen, Leung and Evans (2018)	N/A	Female directors	Firm performance and innovation	1,224 firms	Female board representation is associated with greater innovative success, and subsequent firm performance in innovation-intensive industries.
Brinkhuis and Scholtens (2018)	Efficient market theory	Female CEOs and CFOs	CEO and CFO successions	100 top executive appointments of women who replace men	The analysis of matched-pair to compare the response from investors regarding appointment of female versus male CEOs and CFOs does not reveal significant results. Investors does not value appointment of female CEOs and CFOs differently from that of male ones.
Abdelzaher and Abdelzaher (2019)	Institutional theory	Female directors	Firm value	114 Egyptian firms	Study finds a positive impact of female board membership on firm value (measured as ROE and Tobin's Q).

2.2 A Cross-Disciplinary Review: The Appointment and Consequences of Female Leaders

2.2.1 Finance and Economics Research

In this section, I will review how finance and economics research examines the antecedents, consequences, and contingencies of female leadership including topics such as female leader succession and shareholder reaction.

Past research suggests that the study of ‘CEO succession antecedents’ outpaced the post-succession research stream (Kesner and Sebor, 1994; Giambatista, Rowe, and Riaz, 2005). For example, the antecedent factors for CEO succession range from the presence of an heir apparent (Mooney, Semadeni, Kesner, 2013), CEO origin (Cucculelli, Micucci, 2008; Agrawal, Knoeber, and Tsoulouhas, 2006), CEO duality (Goyal and Park, 2002), behavioral and personality factors (Goel and Thakor, 2008), corporate culture (Fiordelisi and Ricci, 2014), board’s influence (Ansari, Marc Goergen, Mira, 2014) to the proportion of female directors (Gupta and Raman, 2014). For example, a study by Gupta and Raman (2014) is one of the very few articles that examined the antecedents of female CEO successions. They found that the likelihood of a female CEO succession improves as the proportion of female directors on boards increases. Gupta and Raman’s (2014) propose that female directors constitute an important supply of potential women CEO candidates rather than increasing the likelihood of female CEO succession through signaling abilities and competencies of women CEO candidates. Another antecedent that has been studied in the literature is the emergent issue of gender quotas in corporate boards. For example, Stark and Hyll (2014) examined whether women who are more efficient in accumulating human capital utilize gender quotas better than men who are less efficient in accumulating human capital in reaching top roles. They found that men, who are less efficient in

accumulating human capital, felt discouraged by gender quotas while women, who are more efficient in accumulating human capital, appear to be encouraged by it. Similarly, assuming that female leaders have to spend more time and effort to accumulate human capital, Withisuphakorn and Jiraporn (2017) have argued that female CEOs should be, on average, older than their male-counterparts. However, contrary to their arguments, the authors found that female CEOs are two full years younger on average than their male counterparts. However, despite the strides women leaders have made so far, they are not immune to pay inequality, among other types of discrimination (e.g., gender, sexual harassment, pregnancy etc.). In fact, Elkinawy and Stater (2011), have observed that female executives' salaries are about five percent lower than their male-counterparts and that such differences in salary are greater in firms with male-dominated boards.

Other implications of female leaders have been extensively studied by finance and economics scholars. For example, two recent studies have shown that females with more power in the top management team (measured by number of female executives and executive pay slice) face fewer operations-related lawsuits (Adhikari, Agrawal, and Malm, 2018) and firms with greater board gender diversity are less frequently sued for environmental infringements (Liu, 2018). However, Liu (2018) further found that CEO gender is linked to a lower risk of environmental litigation only in firms with low female board representation. Additionally, several scholars have found that boards with female CEOs provide more monitoring (Frye and Pham, 2018) and have fewer internal control weaknesses (Chen, Eshleman, and Soileau, 2016). Likewise, tapping into the board-CEO dynamics, Usman, Zhang, Farooq, Makki, and Dong, (2018) have recently shown that CEOs are more powerful when the boards are more gender-

diverse as female directors face more pressure to comply with the management and thus become weak monitors.

One of the most frequently studied subjects within finance and economics disciplines is risk-taking behaviors of corporate leaders. For example, Adams and Funk (2012) observed that female and male directors differ systematically in their core values and risk attitudes and both of these groups' risk-taking behavior is significantly different than the general population. Specifically, authors found that women in general population tend to have different values and observable characteristics than women who land their director positions in the competitive market for directors. Further, several scholars have found that female directors help reduce the positive relationship between R&D investment and future performance volatility and engage in more efficient innovation processes (Bernile, Bhagwat, and Yonker, 2018; Chen, Ni, and Tong, 2016). Similarly, other scholars, using a sample of Chinese firms, have shown that board gender diversity mitigates excess corporate risk-taking behavior, especially in countries with relatively weaker overall investor protection (Khaw, Liao, Tripe, and Wongchoti, 2016). Complimenting these findings, a study by Faccio, Marchica and Mura (2014) documented that firms led by female CEOs have lower financial leverage, less volatile earnings, and a greater chance of survival than otherwise similar firms led by male CEOs. However, other scholars have argued and found no evidence of gender differences in risk-taking behaviors of corporate leaders (Frag and Mallin, 2017; Sila, Gonzalez and Hagendor, 2016; Mohan and Chen, 2004). For example, Mohan and Chen (2004) found no differences in IPO outcomes (i.e., underpricing, gross proceeds of the offering, the offer price, and percentage of shares floated) between male and

female-led firms. Similarly, a study by Sila et al. (2016) also found no evidence that women board presence influences equity risk.

Aside from the risk-taking implications of female leadership, research has also focused on how female leaders (e.g., directors, executives and CEOs) make strategic decisions concerning organizational issues and whether they are materially different from male leaders. For example, several scholars have examined the effect of female leaders on M&As, capital structure, and debt ratios (Levi et al., 2014; Graham, Harvey and Puri, 2013; Huang and Kisgen, 2013). For example, while Levi et al. (2014) found that firms with female directors are less likely to make acquisitions and if they do, pay lower bid premia, Huang and Kisgen (2013) examined cumulative abnormal returns surrounding acquisitions, equity issuance, and debt issuance announcements for male versus female executives and found that male executives engage in more acquisitions and issue debt more often than female executives. Acquisitions made by male executives have cumulative abnormal announcement returns approximately 2% lower than those made by female executive led firms, and cumulative abnormal announcement returns surrounding debt issues are lower for firms with male executives.

Although much emphasis has been placed on the strategic decision-making preferences of female leaders in various organizational contexts, research in finance and economics disciplines have not paid much attention to the link between whether and how female CEO leadership differs from their male counterparts in initiating strategic change, engaging in strategic conformity and pursuing organizational innovation.

Table 2: Female Leaders and Corporate Outcomes: Finance and Economics Literatures

Author(s) and Year	Theory Used	Unit of analysis	Context	Sample Used	Findings
Mohan and Chen (2004)	Research on gender diversity and risk-taking	female-led and male-led IPOs	IPO underpricing and firm risk	757 female-led IPOs	Study finds no CEO gender-related differences in IPO underpricing or in firm characteristics, including firm risk, gross proceeds of the offering, the offer price, market capitalization of the IPO firm, and the percentage of shares floated.
Elkinawy and Stater (2011)	Human capital theory	Executives	Executive compensation	S&P 1500 firms	The salaries of female executives are about five percent lower than those of male executives. The gender difference in salary is greater in firms with more male-dominated boards.
Adams and Funk (2012)	N/A	Male and female board members and CEOs	Risk attitudes	502 board members and 126 CEOs	Female and male directors differ systematically in their core values and risk attitudes. However, gender differences for such values in director roles differ from gender differences for such values in the general population.
Graham, Harvey and Puri (2013)	Managerial decision-making research	US vs non-US CEOs and CFOs (male vs. female)	M&As, capital structure, and debt ratio	785 firms	Male CEOs are more likely to have higher levels of debt ratios, and higher levels of short-term debt ratios than their female counterparts.
Stark and Hyll (2014)	N/A	Female directors	Board gender quotas	N/A	Study found that men, who are less efficient in accumulating human capital, are discouraged by gender quotas while women who

					are more efficient in accumulating human capital appear to be encouraged by it.
Levi, Li, and Zhang (2014)	N/A	Female directors	M&As	S&P firms during 1997–2009	Firms with female directors are less likely to make acquisitions, and if they do, pay lower bid premia.
Gupta and Raman (2014)	N/A	Female CEOs	Female CEO succession	125 firms led by female CEOs from 1992 to 2010	The likelihood of a female CEO succession enhances as the proportion of female directors on boards increases.
Upadhyay and Zeng (2014)	N/A	Female directors	Corporate information environment	S&P 1500 firms from the years 2000 through 2003	Board gender diversity is negatively associated with corporate opacity- information environment (analyst following, analyst forecast error, bid-ask spread, and share turnover).
Ho, Li, Tam, and Zhang (2015)	Agency theory	Female CEOs	Accounting conservatism	13,206 firm years	Companies with female CEOs report more conservative earnings, and this association appears to be stronger in firms with high rather than low litigation and takeover risks.
Chen, Eshleman, and Soileau (2016).	Tokenism theory and critical mass theory	Female directors	Internal control weaknesses (ICWs)	4267 firm-year observations	Firms with greater female board representation are less likely to have ICWs. The results are not predicted by females sitting on the audit committee.
Khaw, Liao, Tripe, and Wongchoti (2016)	Relational cultural theory and agency theory	Female and male directors	State control, and corporate risk-taking	1361 Chinese firms	Board gender diversity alleviates excess corporate risk-taking behavior, especially in countries with relatively weaker overall investor protection.

Chen, Ni, and Tong (2016)	Gender socialization theory	Female directors	Risk Management: R&D Investment	12,058 firm-year observations spanning from 1998 to 2008	Female directors help reduce the positive relationship between R&D investment and future performance volatility. Firms with greater gender-diverse boards exhibit a lower adverse effect of R&D on the cost of debt.
Mascia and Rossi (2017)	Theory of discrimination	Female and male CEOs	Cost of bank financing	19,969 observations	Female-led firms, compared to male-led ones, are more likely to experience worse price conditions for bank financing. A change in leadership from female to male is associated with improved interest rate levels.
McGuinness, Vieito, and Wang (2017)	Social networks, critical mass theory and team dynamics research	Female executives	CSR performance	2412 Chinese firms	Greater gender balance in top management supports stronger CSR performance. Study found a greater CSR performance in firms when a female officer is present at the CEO and/or vice-CEO level.
Farag and Mallin (2017)	Resource dependence theory	Female directors	Financial fragility	99 European Union banks	A critical mass of female presence on both the supervisory board and the board of directors may reduce banks' vulnerability to financial crisis. Female and male executive directors may have the same risk-taking behavior.
Ahmed and Ali (2017)	Agency theory and critical mass theory	Female directors	Stock liquidity	944 Australian firms from 2008 to 2013	Boardroom gender diversity is significantly and positively linked to stock liquidity. Results reject the assumption of women on the board as 'tokens' and also provide

					support to critical mass theory.
Withisuphakorn and Jiraporn (2017)	Social identity theory and human capital theory	Female and male CEOs	CEO age and gender	787 unique firms	Female CEOs are two full years younger on average than their male counterparts.
Nekhili, Nagati, Chtioui, and Nekhili (2017)	Critical mass theory	Female directors	Voluntary CSR reporting	SBF 120 French firms	Greater levels of CSR reporting is more relevant in terms of market value for firms with gender-diverse boards than for firms with completely male directors.
Abad, DLucas-Pérez, Minguez-Vera, and Yagüe (2017)	The theory of information, economics theory, and agency theory	Female directors	Information asymmetry in equity markets	531 firm-year observations of non-financial Spanish firms	Board gender diversity is negatively related to the level of information asymmetry in the stock market.
Adhikari, Agrawal, and Malm, (2018)	Critical mass theory	Female executives	Corporate litigation and policies	8,388 firm-years	Women with more power in the top management team (measured by female executives' plurality and pay slice) face fewer operations-related lawsuits.
Liu (2018)	Gender socialization and diversity theories	Female directors and CEOs	Environmental litigation	2001 unique firms	Firms with greater board gender diversity are less frequently sued for environmental infringements. CEO gender is linked to reduced environmental litigation only in firms with low female board representation.
Frye and Pham (2018)	Agency theory	Female CEOs	Board structure	1012 female CEOs	Boards with female CEOs are structured for more monitoring. Boards with female CEOs are smaller, more independent, gender diversified, have lower insider to outsider ration, have a larger director network, and have younger directors.

Bernile, Bhagwat, and Yonker (2018)	N/A	Female directors	Corporate policies and firm risk	21,572 firm-year observations	Greater board gender diversity results in lower volatility and better performance for firms. Due to diversity leading to efficient risk-taking, board gender diversity is related to more R&D and have more efficient innovation processes.
Gull, Nekhili, Nagati, and Chtioui (2018)	Human capital theory, agency theory, resource-dependence theory	Female directors	Earnings management	394 firms in the 2001-2010 period	Business expertise and audit committee membership are critical attributes of female directors that improve the effective monitoring of earnings management.
Usman, Zhang, Farooq, Makki, and Dong (2018)	N/A	Female directors	CEO power	17,420 firm-year observations from China's Stock	Study found that because female directors face more pressure to comply with the management, and thus become weak monitors, CEOs are more powerful when the boards are more gender diverse.
Chen, Leung, Song and Goergen (2019)	N/A	Female directors	Reducing male CEO overconfidence	1,629 firms with 11,437 firmyear observations between 1998 and 2013	Female director representation is related to less aggressive investment policies, better acquisition decisions, and improved financial performance for firms operating in industries with high, male CEO overconfidence presence.
Audretsch, Belitski and Brush (2020)	N/A	Female CEOs	Innovation	Cross-country data of 12,412 firms	The differences in risk-perception between women and men-led firms are not related to innovation propensity.

2.2.2 Female Leaders Research in Sociology and Psychology Literatures

Understanding the evolution of female leadership research from the sociological and psychological perspectives is important as it provides not only a historic snapshot of the emergence of the research stream, but also, shows the transformation of various theories and practices associated with it. To achieve this, first, I provide a discussion as to how this research area emerged and evolved in the early years, and then move on to a discussion of the past and current state of this research stream.

Eagly and Carli (2003) have argued that given the modern characterization of effective leadership (e.g., employee empowerment, transformational leadership) is seen as running parallel to female gender roles, the disadvantages for women in leadership roles previously thought to exist may be fading away. Another reason for the “gradual erosion” of female disadvantage may be the growing appreciation of conventional feminine attributes by popular management books, which encourage “creating a sense of community, empowering subordinates, and communicating and listening effectively” (Fondas, 1997). For example, Rosener (1995) characterized the female leadership style as “interactive, involving collaboration and empowerment of employees”, while men’s leadership style is labeled as “command-and-control, involving the assertion of authority and the accumulation of power”.

Many researchers, particularly in organizational studies, have extensively addressed the issue of whether females and males differ in their leadership styles. For example, Heilman, Block, Martell and Simon (1989) examined the sex differences and similarities in leadership style replicating and extending the research conducted by Schein (1973). Schein (1973) found that “successful middle managers are perceived to possess characteristics, attitudes, and

temperaments more commonly ascribed to men in general than to women in general”. Sixteen years later, Heilman et al. (1989, p. 109) have confirmed the results of those early studies, suggesting that “men in general still are described as more similar to successful managers than are women in general”. Further, when females are portrayed as managers, perceived differences in many attributes associated with leadership performance endured.

Aside from the gender differences in leadership style, a fairly recent study by Rosette and Tost (2010) focused on the much-debated female leadership advantage by identifying situational factors (i.e., the level of agency and communal leadership traits) that moderate the likelihood of the emergence of such an advantage. Their argument revolved around empirically testing whether the perceived role incongruence between the female sex role and leadership led to the rise of a women leader disadvantage or instead a women leader advantage. In Study 1, female elite leaders were evaluated as “more agentic and more communal than men top leaders” only when performance was internally attributed, while study 2 suggested that favorable ratings pertain to top-level roles and further showed that the “effect on agentic traits was mediated by perceptions of double standards, while the effect on communal traits was mediated by expectations of feminized management skills”. Further, top female leaders were evaluated most favorably on overall leader effectiveness. Finally, their findings confirm the presence of a qualified women leadership advantage.

Another much-debated issue in female leadership research is gender stereotype and how this issue hinders women’s advancement to the top leadership roles. For example, one stereotypical assumption is that females exhibit more emotions than males. However, it is not clear whether this emotion stereotype impacts leadership perceptions in organizational settings.

Drawing from the “think manager-think male” paradigm (Schein, 1973), Fischbach, Lichtenthaler and Horstmann (2015) explored the similarity of emotion expression descriptions of females, males, and managers. Drawing on data from 1098 participants (male and female managers and employees), where male and female managers, and employees evaluated one of seven target groups on 17 emotions. The target groups include males and females (in the lay population, managers, or successful managers). The authors found that males in general are perceived as more similar to successful managers in expressing their emotions than females are in the lay population. Further, male managers, and female and male employees rated females’ emotion expression very differently from that of successful managers. For example, while males’ emotion expression is perceived to be consistent with that of successful managers, only female managers rated females similar to successful managers and perceived that both males and females both express emotions that are congruent with leadership qualities. Further, Fischbach, Lichtenthaler and Horstmann (2015) argue that such emotion stereotypes may hamper women’s leadership perceptions and thus success. Similarly, a recent article by Arnold and Loughlin (2017), deliberating on research about gender stereotypes in “three streams (‘think manager-think male’; the glass cliff; and childcare)”, suggest that the who, what and when of “leaning in” (representation of women in senior leadership roles) is problematic. Their review of the literature suggests that “gender stereotypes form subtle systemic barriers for the advancement of significant numbers of women into these roles at the group level”. Thus, they further argue that in order to prevent such stereotypes, increasing the female leader presence in senior leadership roles is an imperative first step. Arnold and Loughlin (2017) further demonstrate their point with

an example from the Canadian Federal Government and suggest that “To change the numbers of women in top leadership roles, individuals in powerful positions in organizations (mainly men), need to make the proportional representation of women in senior leadership roles a priority – one that is enforced through measurement, tracking and reinforcement” (Arnold and Loughlin (2017, p. 9).

Furthermore, a select number of studies presented below in Table 3 contribute to the literature on gender and leadership effectiveness in various organizational contexts: token status of women in male dominated organizations (McDonald, Toussaint, and Schweiger, 2004; Yoder, Schleicher and McDonald (1998), leadership and gender stereotyping of emotions (Fischbach, Lichtenthaler and Horstmann, 2015; Rudman and Glick, 1999; Rice, Instone, and Adams, 1984; Brown and Geis, 1984; Schein, 1973), gender and perceptions of leadership effectiveness (Paustian-Underdahl, Walker, and Woehr, 2014; Rosette, and Tost, 2010; Prime, Carter, and Welbourne , 2009), and the implications of gender-specific leadership styles (e.g. transformational and ethical leadership) (Gupta, Han, Mortal, Silveri, and Turban, 2018; Lord, Day, Zaccaro, Avolio, and Eagly, 2017; Kennedy and Kray, 2014; Cheung and Halpern, 2010; Kulich, Ryan and Haslam, 2007).

Table 3: Female Leadership Research in Sociology and Psychology Literatures

Author(s) and Year	Theory Used	Unit of analysis	Context	Sample Used	Findings
Schein (1973)	Sex role stereotypes	Individual	Sex role stereotypes and requisite management characteristics	300 managers	Successful middle managers are seen to have characteristics, attitudes, and temperaments that are more commonly ascribed to males in general than to females (in general).
Rice, Instone and Adams (1984)	Sex-role stereotypes	Individual	Leader Sex, leader success, and leadership process	1652 U.S Military cadets	Leader-follower sex effects showed that female subordinates are stronger in their affective reactions and generally are more positive in their description of training experiences.
Brown and Geis (1984)	Social comparison theory	Individual	Evaluations of men and women leaders	160 undergrads	Lack of consensus about nonverbal cues (authority legitimation and group members' nonverbal "leakage" cues of affective reaction to the leader) could result in discriminatory evaluations of equally competent males and female. Also, equalizing the consensus values could eliminate discriminatory bias.
Heilman, Block, Martell and Simon (1989)	Sex stereotypes and implicit personality theory	Individual	Characterizations of men, women, and managers	268 managers	Males on average are still described as more akin to successful managers than females in general. When females were portrayed as managers, raters continued to depict female managers differently than their male counterparts.
Eagly and Johnson (1990)	Social role theory	Research studies	Gender and leadership style	162 studies (meta-analysis)	Females tend to adopt a more democratic or participative style and a less autocratic or directive style than

					their male counterparts.
Eagly, Karau and Makhijani (1995)	Social-role theory	Research studies	Gender and the effectiveness of leaders	83 studies (meta-analysis)	Males were more effective than females in roles that were defined in more masculine terms, and females were more effective than males in roles that were defined in less masculine terms. Males were more effective than females when leader-subordinate roles were male-dominated numerically.
Yoder, Schleicher and McDonald (1998)	Tokenism theory	Individual	Token women leaders	30 women undergrads	In a masculine task, only token female leaders who were empowered through top roles and expertise and legitimated by a male experimenter as legitimate would be more effective in influencing the performance of their all-male groups than appointed-only and appointed-trained leaders.
Rudman and Glick (1999)	Gender stereotypes	Individual	Feminized management and backlash toward agentic women	234 Rutgers University undergraduates	Agentic female job applicants are seen as less socially skilled than agentic males, but this perception only resulted in hiring discrimination for the feminized, not the masculine job. Communal applicants (regardless of sex) invariably received low hiring ratings.
Eagly and Karau (2002)	Role congruity theory	N/A	A theory of prejudice against female leaders	N/A	Females are perceived less favorably than males as potential leaders and females' leadership behavior is less favorably evaluated.
Eagly, Johannesen-Schmidt and	Social role theory	Research studies	Transformational, transactional, and laissez-faire	Meta-analysis of 45 studies	Leadership style results from experimental settings are gender-stereotypic. Female leaders surpassed

Van Engen (2003)			leadership styles		males on the transformational leadership and contingent-reward scale of transactional leadership. Male leaders exceeded females on the active and passive management-by-exception and laissez-fair subscales.
Eagly (2007)	Role congruity theory	N/A	Female leadership advantage and disadvantage	N/A	Although females are praised for their unique skills and effectiveness as leaders, more people choose males over female leaders and it is tougher for females to succeed in male-dominated leadership roles.
Kulich, Ryan and Haslam (2007)	Romance of leadership	Individual	Leadership attributions and performance-based pay	210 leaders	Romance of leadership does exist for both men and women. While performance-based pay for a female is contingent upon her charisma and leadership ability, a male leader's pay results from the romance of leadership such that enhanced firm performance leads to increased perceived charisma, increased leadership ability, and a larger bonus.
Ayman and Korabik (2010)	Leadership and social role theories	N/A	Gender and culture	Literature review	Dynamics related to either culture or gender (e.g., stereotypes and schemas, ingroup-outgroup interaction, role expectations, power and status differentials) can have an important impact on many aspects of leadership.
Prime, Carter and Welbourne (2009)	Role congruity theory	Individual	Managers' stereotypic perceptions of women and men leaders	296 managers	Females are seen more effective than males at caretaking leader behaviors and that males were more effective than women at action-oriented, "take-charge" leader behaviors.

Cheung and Halpern (2010)	Leadership theory building	N/A	Work and family in a culture of gender	N/A	An alternative model to the usual notion of western male as leaders is developed.
Rosette and Tost, (2010)	Role congruity theory	Individual	Agentic women and communal leadership	106 graduate and undergraduate students	There is a qualified female leadership advantage.
Grosvold (2011)	Institutional theory	Multi-level	Women on corporate boards	43 countries	Institutional context plays an important role in shaping the gender-profile of the corporate board of directors. Countries with more liberal political views, lower cultural uncertainty avoidance and a larger share of educated women have more women board of directors.
Kennedy and Kray (2014)	Psychological theory and women's development	Individual	Gender differences and ethical compromises	106 grad students	When jobs involve in making ethical compromises, females report less interest in the jobs than men. Females implicitly associated business with immorality more than males did.
Paustian-Underdahl, Walker and Woehr (2014)	Role congruity theory	Research studies	Leadership effectiveness	99 independent samples from 95 studies (meta-analysis)	When all leadership contexts are considered, males and females do not differ in perceived leadership effectiveness. When self-ratings only are examined, males assess themselves as significantly more effective than women evaluate themselves.
Fischbach, Lichtenhaler and Horstmann (2015)	Think Manager – Think Male paradigm	Individual	Gender stereotyping of emotions	1,098 participants	In emotion expression, males in general are seen as more similar to successful managers than are females in general.

Grosvold, Rayton and Brammer (2016)	Neo-institutional theory	Multi-level	Women on corporate boards	23 countries	Family, education, economy, and government influence female's rise to the board. However, religion does not influence women's rise to the corporate board of directors.
Lord, Day, Zaccaro, Avolio and Eagly (2017)	Categorization theory	N/A	Leadership in applied psychology: Three Waves of Theory and Research	17 seminal articles	There is an increase in complexity from early research which mainly focused on personnel issues linked to World War I to contemporary multilevel models and meta-analyses on teams, shared leadership, leader member exchange, gender, ethical, abusive, charismatic, and transformational leadership.
Gupta, Han, Mortal, Silveri and Turban (2018)	Role congruity theory	Female CEOs	Shareholder activism	3,026 unique firms	Female CEOs, compared to male CEOs, are significantly more likely to face threat from activist investors.
Post, Latu and Belkin (2019)	Interpersonal emotion management	Female leaders	Female leadership trust	Two experiments with women and men (N = 412 and N = 400)	Female leaders use relational behaviors to their advantage and this is manifested only when crisis consequences are known.

2.2.3 Female Leaders Research in Gender Studies Literature

In this section, I review past research works that view female leadership research from the gender studies perspective. One of the most common themes in gender studies is how organizations view gender and whether it is embedded into the organizational culture and structure. For example, Acker (1990) developed the theory of ‘gendered organizations’ (gender-specific) and argued that organizational structure is not gender-neutral, and the universal embodiment of a worker as male pervades the organizational process while alienating females and helping the reproduction of gender segregation in organizations. Sixteen years later, Acker (2006) revisited the ‘gendered organization’ and developed a conceptual strategy for analyzing the mutual production of gender, race, and class inequalities in work organizations. Her work sought to understand why so many organizational equality initiatives have had little success or have failed altogether.

Further, Ely and Padavic (2007) argued in their study that although the organizational behavior literature has extensively documented how the sexes differ in a variety of contexts, from leadership style to risk-taking behavior to negotiation skills to work values, this body of work has focused mostly on exploring ‘whether’ rather than ‘why’ such differences emerge. The lack of focus on the ‘why’ part of the questions leads to the neglect of organizational features in understanding such differences. Thus, the authors further asserted that the research implications and theoretical assumptions of ‘gender as variable’ approach inhibit the authentic conceptualization of how gender operates in organizations. In other words, research on sex differences fails to unpack how organizations as sociocultural contexts shape gender differences. To address this issue, Ely and Padavic (2007) drawing from feminist theory, argued that focusing

on gender identity and organizational structure as a system would improve the field. Heeding this call, Lewis (2014), reviewing the entrepreneurship literature and drawing from a post-feminist perspective (i.e., a societal view that many of the goals of classic feminism have already been achieved), argued that we should actuate post-feminism as a critical concept for understanding female's experiences in modern organizations rather than simply considering female's role in organizations as an exclusion connected to the dominating masculine norms. Such an approach to female presence in male-dominated organizations has led to seeing females as 'token' leaders. In an attempt to understand how females feel about holding a token status in male-dominated groups, McDonald, Toussaint, and Schweiger (2004) hypothesized that females in token status roles would report more negative expectations on all measures regarding their group interaction than would women in non-token status roles. Additionally, the authors hypothesized that status would reduce some negative expectations such that high-status gender-token women would be more similar to non-token women than to gender-token women in their expectations of performance pressure, anxiety, comfort, confidence, and effectiveness. Based on data collected from sixty-three undergraduate women participating in one of three tokenism situations: 1) non-token, 2) gender-token, and 3) high-status gender-token (leading a group of men in a decision-making exercise), they found that increased social status may help prevent gender-token women from developing negative expectations about interactions with male-dominated work groups.

Another much-discussed issue is that when women work in male-dominated professions, they face a "glass ceiling" that prevents their appointments to the top roles at organizations. To understand the reasons for women's underrepresentation in landing top leadership roles, Fernandez-Mateo and Fernandez (2016) examined the reasons for the low proportion of women

placed in executive roles. Using data on 10,970 individuals who were considered by a search firm, the authors find limited evidence that demand-side search committees strongly manifest gender bias at the beginning of the hiring process and this is driven by both the supply-side and demand-side actors. Specifically, once considered for a position, females are no less likely than males to be selected for jobs, however they are slightly less likely to be interviewed by the search firm. In contrast to the ‘glass ceiling’, Williams (1992) coined the term ‘glass escalator’ referring to the advantages that men have in women’s professions (e.g., nursing, teaching, librarianship, and social work). In her study, Williams (2013) revisited her original analysis and outlined two important limitations of the term ‘glass escalator’: “(1) it fails to adequately address intersectionality (i.e., the intertwined nature of social categories of race, class, and gender) in particular, it fails to theorize race, sexuality (i.e., sexual feelings towards other people), and class; and (2) it was based on the assumptions of traditional work organizations, which are undergoing rapid transformation in our neoliberal era”. To address these limitations, Williams (2013) suggested that scholars should develop new theory in order to explain the persistence of straight white male advantage in neoliberal organizations that are characterized by having project-oriented working conditions, interdisciplinary teams, and flatter organizational hierarchies.

Along with the studies discussed above, Table 4 below presents a select number of studies examining various issues ranging from female succession (Fernandez-Mateo and Fernandez, 2016; Brady, Isaacs, Reeves, Burroway, and Reynolds, 2011) to media’s portrayal of female leaders (Gottschalk and Smith, 2015; Krefting, 2002), female leaders and evaluation biases (Forsyth, Heiney, and Wright, 1997), firm outcomes of female leadership (Burke, 1994;

Vilkinas and Cartan, 1997; Ming and Hock Eam, 2016; Elsaid and Ursel, 2011) and gender inequalities in organizations (Stainback, Kleiner, and Skaggs, 2016; Williams, Muller, and Kilanski, 2012; Mackay, Kenny, and Chappell, 2010; Acker, 2006). Despite the contributions of these articles to both the gender studies and management literatures, the cumulative research evidence has not yet provided a comprehensive analysis of female leadership and its effects on some organizational contexts such as strategic change, conformity and organizational innovation.

Table 4: Female Leaders Research in Gender Studies Literature

Author(s) and Year	Theory Used	Unit of analysis	Context	Sample Used	Findings
Acker (1990)	A theory gendered organization	N/A	Gender and organizations	N/A	Organizational structure is not gender neutral.
Burke (1994)	N/A	Female directors	Female directors and change	20 women directors	Female directors are playing crucial roles for change on female's issues.
Forsyth, Heiney and Wright (1997)	Leadership categorization and social role theory	Individual	Women leaders and evaluation biases	85 individuals	Group members with liberal views about female's roles responded positively to both leadership types. Group members with conservative views felt the task-oriented leader was more effective, but they also rated females more negatively on measures of collegiality.
Vilkinas and Cartan (1997)	Theory of behavioral complexity in managerial leadership	Multilevel	Managerial roles and gender	149 managers	Staff reported that female managers demonstrated four roles- innovator, coordinator, mentor, director- more than males. Supervisors did not see a difference between males and females in displaying their managerial roles.
Krefting (2002)	N/A	Female	Female executives	27 front page	Female leaders are mostly

		executives	and media coverage	Wall Street Journal accounts	portrayed in media negatively (concerns about competence and likability, social order) while similar issues were not discussed in the portrayals of male executives. Gender of the author does not affect the tone of the coverage.
McDonald, Toussaint and Schweiger (2004)	Tokenism theory	Individual	Token females	63 undergraduate females	Heightened social status may help hinder token females from developing negative expectations about interactions with male-dominated work groups.
Acker (2006)	Inequality regimes	N/A	Gender, class, and race in organizations	N/A	A conceptual strategy for analyzing the mutual production of gender, race, and class inequalities in work organizations is developed. It may help understand why so many organizational equality initiatives have had little success or have failed altogether.
Ely and Padavic (2007)	Feminist theory	N/A	Feminist analysis of organizational research	20 year of survey empirical literature review	Focusing on gender identity and organizational structure as a system would improve the research in gender studies.
Mackay, Kenny and Chappell (2010)	New institutionalism theory	N/A	Gender and new institutionalism	N/A- literature review	Research can apply a gendered (gender-specific) lens to the new institutionalism.

Brady, Isaacs, Reeves, Burroway and Reynolds (2011)	Queuing theory	Individual	Female executive successions	3,691 executives (Fortune 500 firms)	Females are less likely to become CEOs and COOs, but more likely to be chief corporate officers and general counsels. Firms that have experienced a scandal in recent years are more likely to have female executives.
Williams, Muller, and Kilanski (2012)	Theory of gendered organizations	N/A	Gendered organizations in new economy	N/A	Study extends Acker's theory of 'gendered organizations' by analyzing the factors that recreate gender inequality in the twenty-first-century workplace, and by recommending appropriate policy approaches to remedy these disparities.
Williams (2013)	Glass escalator paradigm	N/A	Glass escalator-revisited	N/A	New concepts are needed to understand workplace gender inequality in the 21st century and glass escalator paradigm fails to consider two points in the original work: intersectionality and dynamic nature of work organizations.
Lewis (2014)	Post-feminist perspective	N/A	Post-feminism and organizations	N/A	We should actuate post-feminism as a critical concept for understanding female's experiences in modern organizations.
Gottschalk and	A gendered	Individual	Gender and crime	179 crimes	Only eight out of 179 white-

Smith (2015)	theory of female offending				collar crimes were conducted by females in years from 2009-2011 as presented in Norwegian news.
Fernandez-Mateo and Fernandez (2016)	Queuing theory	Individual	Executive search and gender inequality	10,970 executive level job applicants	Once considered for a position, females are no less likely than males to be selected to the jobs, however they are slightly less likely to be interviewed by the search firm.
Stainback, Kleiner and Skaggs (2016)	Psychological theory and women's development	Multilevel	Women and gender segregation	Fortune 1000 firms	Female's presence on corporate boards, TMTs, and workplace managerial roles is linked to less workplace gender segregation.
Ming and Hock Eam (2016)	N/A	firm level	female directors and firm performance	123 Malaysian firms	Presence of female directors on the board do not have any significant linear or non-linear effect on the financial performance.

2.2.4 Female Leaders Research in Management Literature

In this section, I review the management literature, including studies from various management sub-disciplines such as Organizational Behavior, Human Resources Management, Strategic Management and International Management. The studies presented in Table 5 explored the antecedents and consequences of female leadership. While it is not exhaustive, Table 5 below summarizes the major studies in this area.

One of the most frequently studied areas in management research is female director appointments (Seierstad, 2016; Gabaldon, Anca, Mateos de Cabo and Gimeno, 2016; Marquardt and Wiedman, 2016; Kogut, Colomer and Belinky, 2014; Terjesen, Sealy and Singh, 2009; Sheridan and Milgate, 2005) and their effects on corporate outcomes (Perrault, 2015; Bernardi, Bosco, and Columb, 2009; Bernardi, Bosco and Vassill, 2006; Zelechowski and Bilimoria, 2004). For example, Gabaldon et al. (2016) in their review have argued that the underrepresentation of women on boards can be explained by supply-side and demand-side effects. Specifically, supply-side effects refer to females' own expected gender roles (Eddleston, Veiga, and Powell, 2006), values and attitudes (Schuh, Hernandez-Bark, Van Quaquebeke, Hossiep, Frieg, and Van Dick, 2014), or work-family balance preferences (Eby, Casper, Lockwood, Bordeaux, and Brinley, 2005), all of which may somewhat contribute to a limited pool of qualified female candidates for board seats (Bygren and Gähler, 2012). Demand-side effects refer to the socio-cultural challenges (e.g., gender and racial discrimination) inherent in the executive labor market that hinder the advancement of females to senior leadership positions.

Although using supply-side and demand-side effects in explaining female director appointments might seem inclusive, Marquardt et al. (2016) have found another factor that may

improve board gender diversity. Drawing from agency and institutional theories and using shareholder proposals related to gender diversity, Marquardt et al. (2016) found that financially motivated shareholder activists are more likely to target corporations with extremely low female board presence than are socially motivated shareholder activists, suggesting that shareholder proposals can be an effective mechanism for increasing board diversity. However, the battle for female leaders does not end once they land a board seat, in fact, it gets fiercer and unfairer as they are mostly seen as token appointments and face biased performance evaluations from their peers and bosses. For example, Zelechowski and Bilimoria (2004), using Fortune 1000 firms have found that female insider directors hold fewer directorships on other firms' boards, have less powerful corporate titles, occupy disproportionately more staff functions, are less likely to be top earners of their firms, and earn considerably less than male inside directors. More recent studies (e.g., McDonald et al., 2018) have made similar observations.

Despite these grim findings, management scholars have also documented the business case for female director representation. For example, scholars have found that the greater the female director representation, the more likely firms are to appear on the "100 Best Companies to Work For" list (Bernardi, Bosco, and Vassill, 2006) and the World's Most Ethical Companies' list (Bernardi, Bosco and Columb, 2009). Another study found that board gender diversity is effective in improving shareholder trust through enhanced perceptions of the board's instrumental, relational and moral legitimacy (Perrault, 2015). Also, in their meta-analysis, Byron and Post (2016) found that the positive relationship between female board representation and social performance is stronger among boards with stronger shareholder protections and gender parity.

Another research stream that has received a vast amount of attention from management scholars is female executive successions, along with various post-succession implications. While several studies have explored glass cliff factors leading to the appointments of female CEOs (Cook and Glass, 2014; Ryan, and Haslam, 2007; Furst and Reeves, 2008), others have argued that it is more about the pipeline of executive level females reaching the top roles (Helfat, Harris and Wolfson, 2006) and career related factors (Knippen, Palar and Gentry, 2018; Fitzsimmons, Callan and Paulsen, 2014). For example, Cook and Glass (2014) drawing from glass cliff theory, showed in their study that financially struggling firms tend to appoint occupational minority or women CEOs to their C-units and when the firms' performance continues to decline, these leaders are likely to be replaced by white males (savior effect). Helfat et al. (2006), after studying 942 firms with 9,950 executives, projected that with the on-going female succession trend in the early 2000's (1.8 %), 6 % of CEOs in the Fortune 1000 would be female by 2016. Since then, the percentage of female CEOs in Fortune 1000 index has actually slightly increased to 5.4% (Ismail, 2018). The authors also pointed out the importance of hiring female managers, adopting relevant policies and mentoring practices would help increase the female CEO pipeline to the top. Similarly, Fitzsimmons et al. (2014) interviewing 60 CEOs, found that females' limited access to career relevant experiences in childhood, adolescence and in organizations results in persistent limitations in human capital growth and thus inhibits their chances to access CEO roles and the types of positions available to them. Also, several scholars have shown how males, compared to females, can be more influential in hiring of females versus male managers (Carnahan and Greenwood, 2017; Dwivedi, Joshi and Misangyi, 2017). For example, Joshi and Misangyi (2017) have shown that female succession occurs at the junction of local firm-level

factors and attributes of the (mostly) male predecessors' promotion of gender-inclusive gatekeeping during succession. In addition, Carnahan and Greenwood (2017) found that males' political ideology (liberal vs conservative) is significantly more influential than the ideology of their female partners in affecting hiring process. Specifically, the authors found that liberal male partners are more likely to select female associates to be members of their client teams than female partners do. On the other hand, Brescoll (2016) has found that gender stereotypes of emotion lead to a fundamental barrier to female's ability to reach and succeed in leadership roles, that female leaders can be penalized for even minor or moderate displays of emotion, especially when the emotion conveys dominance (e.g., anger or pride), while being emotionally unexpressive may also result in penalties because unemotional women are seen as failing to fulfill their warm, communal role as women. Also, Barbulescu and Bidwell (2013) found that females are less likely than males to apply to finance and consulting positions and are more likely to apply to general management roles. These differences are partly explained by females' preferences for jobs with better anticipated work-life balance, their lower identification with stereotypically masculine roles, and their lower expectations of job offer success in such stereotypically masculine jobs.

Similar to female directors, executive successions also have various implications for firms and the career prospects of female CEOs. Several past studies have found favorable outcomes resulting from female leadership. For example, Terborg, Peters, Ilgen, and Smith (1977) found that employees display favorable attitudes toward female managers who have a formal education. Lauterbach and Weiner (1996) have shown that while male managers are more likely to act out of self-interest, show less concern for others' feelings, plan alone, and focus on

task, female managers are more likely to focus on firm interests, engage others in decision-making more, and focus on the task and interpersonal approaches.

Also, research shows that the roles female managers play in their personal lives provides them with psychological benefits, emotional advice and support, practice at multi-tasking, improving personal skills and effectiveness (Ruderman, Ohlott, Panzer and King, 2002). However, literature has also provided findings confirming the biased evaluations and perceptions female CEOs face in organizational settings (McDonald et al., 2018; Cardador, 2017; Yang and del Carmen Triana, 2017; Hekman, Johnson, Foo and Yang, 2017; Brands and Kilduff, 2013; Vial, Napier and Brescoll, 2016; Dobbins and Platz, 1986). For example, Vial et al. (2016) found that female powerholders are considered as less legitimate than male powerholders. Unless they are able to legitimize their role, relative illegitimacy will lead to a variety of consequences such as more negative subordinate behavior and diminished cooperation when the leader is a female. Also, McDonald et al. (2018) documented that following the succession of a female or racial minority CEO, white male top managers tend to experience a decreased sense of organizational identification. The authors further found that such decreased organizational identification led male top managers to lend less help to their peers and they did more so towards minority-status peers (e.g., African American, Hispanic peers). In addition to large corporations, the optics are not much better in academia. Drawing from feminist psychoanalytical post-structuralist theories of Luce Irigaray and Julia Kristeva, Fotaki (2013) showed how males are seen as the dominate players in the knowledge creation process, how the lack of female symbolic representation inhibits their participation on equivalent terms, and how females often both collude with and resist their own marginalization in academia.

Although it has not been studied in the context of female CEO leadership, several scholars have been documenting the queen bee syndrome between female junior level employees and senior level managers (Derks, Van Laar and Ellemers, 2016; Derks, Van Laar, Ellemers and De Groot, 2011; Ellemers, Van den Heuvel, De Gilder, Maass, and Bonvini, 2004). Queen bees may be senior females in male-dominated organizations who have accomplished their goals by disassociating themselves from other females. For example, Derks et al. (2011) found that realizing gender-bias cues elevated the queen-bee responses among senior policewomen with low gender identification, but policewomen with high gender identification seemed motivated to increase opportunities for other females. However, such responses are argued to stem from the gender discrimination that females experience at work. Research showed that the queen bee attitude is a counter-response to the discrimination and social identity threat that females may experience in male-dominated organizations, and queen bee behavior is not a typical feminine response but part of a general self-group distancing response that is also found in other marginalized groups (Derks et al., 2016). Finally, Table 5 below presents some of the major research works in the management area.

Table 5: Female Leaders Research in Management Literature

Author(s) and Year	Theory Used	Unit of analysis	Context	Sample Used	Findings
Terborg, Peters, Ilgen, and Smith (1977)	N/A	Individual	Perceptions towards female managers	180 male and 100 female employees	Employees have a favorable attitude toward female managers who have formal education.
Lauterbach and Weiner (1996)	Theory of gender formation	Individual	Female and male leadership styles	Fortune 100 company	While female managers are more likely to focus on firm interests, engage others more, and focus on the task and interpersonal approaches, male managers are more likely to act out of self-interest, show less concern for others' feelings, plan alone, and focus on task.
Dobbins and Platz (1986)	Sex stereotypes	Studies	Sex differences and leadership	17 studies – meta-analysis	Male and female leaders demonstrate equal amounts of initiating structure and consideration and have equally satisfied their employees. Male leaders are evaluated as more effective than female leaders, but only in laboratory settings.
Ruderman, Ohlott, Panzer and King (2002)	Role accumulation perspective	Individual	Multiple roles and female managers	61 female managers and executives	Qualitative results: The roles female managers play in their personal life provides them with psychological benefits,

					emotional advice and support, practice at multi-tasking, improving personal skills and effectiveness. Quantitative results: female managers who have multiple role commitments tend to have life satisfaction, self-esteem and self-acceptance.
Zelechowski and Bilimoria (2004)	Pipeline theory	Individual	Female and male inside directors	Fortune 1000 firm	Female insider directors hold fewer directorships on other firms' boards, have less powerful corporate titles, occupy disproportionately more staff functions, are less likely to be top earners of their firms, and earn considerably less from male inside directors.
Sheridan and Milgate (2005)	N/A	Individual	Board appointments of male and female directors	47 female and 47 male directors (survey)	Female directors, compared to male directors, believe that their high visibility and family contacts are major factors for their nomination to boards.
Helfat, Harris and Wolfson (2006)	N/A	Multilevel	Female executives and pipeline to top	942 firms and 9,950 individuals	If current trends on female CEO successions continue, perhaps 6 % of CEOs in the Fortune 1000 will be women by 2016.

Bernardi, Bosco and Vassill, (06)	Contingency theory, life-cycle theory, and signaling theory	Individual	Female director presence and Fortune's "100 Best Companies to Work for" list	27 firms for a sample period of 1977 – 2001	There is a positive relation between the number of female directors and a firm's presence on the "100 Best Companies to Work For" list.
Ryan and Haslam (2007)	Implicit theories of gender and leadership (think-manager-think-male)	N/A	Glass cliff	N/A	Study outlines strategies for diminishing glass cliffs, however the authors argue that such strategies are dependent upon the disadvantaged groups' capacity to overpower the status-quo's persistence on this issue.
Furst and Reeves (2008)	The theory of creative destruction	N/A	Female leader emergence and creative destruction	N/A	Females may reach to leadership roles in turbulent environments that are receptive to new talent and open to innovative, bold ideas.
Terjesen, Sealy and Singh (2009)	N/A	Articles involving micro, meso, and macro levels research	Females on corporate boards	400 publications	Research on women on corporate boards mainly focuses on attracting a diverse talent pool and building fairer and inclusive firms.
Bernardi, Bosco and Columb (2009)	N/A	Individual	Female directors and World 's Most Ethical Companies 'list	38 firms of Fortune 500 and Fortune 1000	A greater percentage of females on the board of directors of a Fortune 's 500 firms is associated with the corporation being listed on Ethisphere

					Magazine 's ' World ' s Most Ethical Companies ' list.
Derks, Van Laar, Ellemers and De Groot (2011)	Social identity theory	Individual	Queen bee syndrome	63 Dutch senior level female polices	Gender-bias cues elevated the queen-bee responses among senior policewomen with lower gender identification, but policewomen with greater gender identification seemed motivated to increase opportunities for other females.
Vinkenburg, Van Engen, Eagly and Johannesen-Schmidt (2011)	Transformational leadership and gender roles	Individual	Leadership styles and gender stereotypes	271 (122 U.S. and 149 Dutch) participants	Females are believed to display more transformational and contingent reward behaviors, and fewer management-by-exception and laissez-faire behaviors than males are. Males perceive inspirational motivation as more important than females do.
Barbulescu and Bidwell (2013)	Gender role socialization	Individual	Females and job preference	1255 MBA students	Females are less likely than males to apply to finance and consulting positions and are more likely to apply to general management roles. These differences are partly explained by females' preference for jobs with better assumed work-life balance, their lower identification with stereotypically masculine roles, and their lower expectations of

					job offer success in such stereotypically masculine jobs.
Fotaki (2013)	Feminist psychoanalytical post-structuralist theories Luce Irigaray and Julia Kristeva	Individual	Females in academia and male norms	23 female faculty in nine UK management and business schools	Male norms and female's absence from symbolic representations inhibits their participation in equivalent terms in the institutions studied. Females often both collude with and resist their own marginalization in academia.
Cook and Glass (2014)	Glass cliff phenomenon	Minority and female CEOs	Succession and performance	551 CEO transitions	Financially struggling firms tend to appoint occupational minority or women CEOs to their C-units.
Fitzsimmons, Callan and Paulsen (2014)	Grounded theory	Individual	Gender and CEO succession	30 male and 30 female CEOs	Females' limited access to career relevant experiences in childhood, adolescence and in organizations results in persistent limitations in capital growth and thus inhibits their chances to access to CEO roles and the types of positions available to them.
Kogut, Colomer and Belinky (2014)	Tokenism and homophily	Female directors	Female directors and quotas	6,519 U.S. firms and 29,750 directors	Minimal number of quotas lead to well-connected networks of female directors who gain equality in their centrality and influence.
Perrault (2015)	Gender diversity research and social networks	Interviews and archival documents	Board gender diversity and shareholder	34 semi structured interviews,	Board gender diversity helps firms improve shareholder trust through enhanced perceptions

			activism	archival and documentary evidence	of board's instrumental, relational and moral legitimacy.
Hill, Upadhyay and Beekun (2015)	Role congruity theory	Individual	CEO exits and gender and minority status	2,255 unique firms	Minority status helps CEOs receive higher compensation than white male CEOs gain. Female minority status is negatively, and ethnic minority status is positively related to the likelihood of CEO exits.
Derks, Van Laar and Ellemers (2016)	Literature on social identity theory and queen bee phenomenon	Articles	The queen bee phenomenon	N/A- literature review	The queen bee phenomenon is an outcome of the gender discrimination that females experience at work. Research shows that (1) queen bee behavior is a response to the discrimination and social identity threat that females may experience in male-dominated organizations, and (2) queen bee behavior is not a typical feminine response, but part of a general self-group distancing response that is also found in other marginalized groups.
Lemoine, Aggarwal and Steed (2016)	Social role theory and the social identity model of leadership	Multilevel	Female leader emergence: Extraversion and gender composition in groups	498 full-time first-year MBA students	Females are more likely to emerge as leaders when their groups are both high in extraversion and composed of more males than females.

Marquardt and Wiedman (2016)	Agency theory and institutional theory	Multilevel	Shareholder activism and board gender diversity	182 shareholder proposals related to board diversity for S&P 1500 firms	Financially motivated activists are more likely to target firms with extremely low female board representation than socially motivated activist is. Shareholder proposals are an effective mechanism for increasing board gender diversity.
Seierstad (2016)	Justice and utility arguments of gender diversity	Female directors	Female board diversity and quotas	Qualitative interview data from 19 female non-executive board members	Females tend to draw on utility, mainly the 'business case', and individual justice arguments both in support of gender quotas and to justify their use in helping females gain board seats.
Gabaldon, Anca, Mateos de Cabo and Gimeno (2016)	Literature uses various theories to explain supply and demand side of women director searches	N/A	Supply and demand views on women director search	N/A	Study provides recommendations to understand causes of lower ratios of gender diversity on boards and offer nuanced policy tools to promote more women into board leadership positions.
Vial, Napier and Brescoll (2016)	Self-reinforcing cycle of illegitimacy	N/A	Female leaders and Illegitimacy	N/A	Female powerholders are considered as less legitimate than male powerholders. Unless female leaders are able to legitimize their role, relative illegitimacy will prompt a variety of outcomes such as more negative subordinate

					behavior and diminished cooperation.
Silberzahn and Menges (2016)	Leadership theory and gender research	Individual	Leaders and facial masculinity	252 American adults	Women leaders who rate greater in facial masculinity as well as those who rate lower in facial masculinity are both selected as leaders in competitive contexts. Lower facial masculinity in men is not perceived to indicate competitiveness.
Kalysh Kulik and Perera (2016)	Gender research	Multilevel	Work–life practices and women leaders	Ranges from 568 to 675 firms across variables	Work–life practices can help increasing gender diversity in leadership roles, but the significant positive association will only be visible several years (8 years) after practice adoption. However, this effect was not shown in male-dominated organizations.
Brescoll (2016)	Sex stereotype literature	Existing articles	Gender stereotypes and female leadership evaluations	N/A- literature review	Gender stereotypes of emotion leads to a fundamental barrier for female's ability to reach to and succeed in leadership roles.
Byron and Post (2016)	Board gender research	Individual	Female directors and corporate social responsibility	Meta-analysis of 87 independent samples	The positive relationship between female board representation and social performance is stronger among boards with stronger shareholder protections and gender parity.

Brands and Fernandez-Mateo (2016)	Theory building: Belonging uncertainty	Individual participants and executive search results	Female succession and recruitment experiences	Study 1: 23,555 executive searches Study 2: 90 participants Study 3: 128	Females are less likely than males to consider another executive job with a prospective employer that has rejected them in the past.
Dwivedi, Joshi and Misangyi (2017)	Mid-range theory of gender-inclusive gatekeeping	Succession events	Female CEO succession	84 female succession events	Female succession occurs with the junction of local firm-level factors and attributes of the (mostly) male predecessors' promotion of gender-inclusive gatekeeping during succession.
Carnahan and Greenwood (2017)	N/A	Multilevel	Political beliefs and gender inequality	Attorneys working for 200 law firms	Political ideology (liberal vs conservative) of male law office partners is significantly more influential than the ideology of female partners in affecting the differences in hiring law associates. More liberal male partners are more likely to select female associates to be members of their client teams.
Cardador (2017)	Sex stereotypes	Individual	Female manager representation and consequences	61 interviews with industry engineers	Increasing female representation in managerial roles in engineering may cause further sex segregation by fostering mixed identification with engineering, reinforcing stereotypes about women's suitability for technical work,

					and increasing work–life balance tensions.
Hekman, Johnson, Foo and Yang (2017)	Attribution theory	Executives	Diversity-valuing behavior and performance ratings	350 male and female executives	Diversity-valuing behaviors are only negatively associated with evaluations of leaders who were non-White or female. Highest competence and performance ratings were given to non-White and female leaders who engaged in low levels of diversity-valuing behavior. White or male leaders who involve in diversity-valuing behavior are not penalized for doing so.
Meister, Sinclair and Jehn (2017)	Theory building (grounded theory)	Individual	Female leaders and identity at work	21 women leaders of Australian firms	With time and power, the experience of identity asymmetry becomes less salient for women.
Yang and del Carmen Triana (2017)	Role congruity theory	Female entrepreneurs	Female entrepreneurs and business success	1,214 entrepreneurs	Females’ disadvantages in running their businesses may be propelled by gender beliefs that discount females’ leadership. Female entrepreneurs’ businesses are more likely to fail than their male-counterparts and it is dependent upon whether their merit-based competence is inferior to that of their cofounders while in the same case males continue their

					businesses successful even if their competence is inferior to their co-founders.
Knippen, Palar and Gentry, (2018)	Theory of board discretion and Tokenism theory	Female CEOs	Female CEO succession	S&P 1500 firms	Strong firm financial health and board's situation specific experience resulted in appointments of female CEOs.
McDonald, Keeves and Westphal (2018)	Intergroup relations literatures	Executives	Female CEOs and male executive's organizational identification	1,025 executives	Following the succession of a female or a racial minority CEO, white male top managers tend to experience a decreased sense of organizational identification, and thus lend less help to peers (especially to minority colleagues).
Abbasi, Alam, and Bhuiyan (2020)	Agency theory	Female directors	Audit committees and female directors	FTSE 350 firms from 2009 to 2017	Female directors and female accounting experts on audit committees are positively linked to audit quality

2.3 Female Leaders and Strategic Decision-Making

The strategic choice and behavioral view of organizations (Child, 1972; Cyert and March, 1963; Finkelstein and Hambrick, 1996) argue that top managers are cognitively limited in developing a complete understanding of their environments (Fiol and O'Connor, 2003; Daft and Weick, 1984) and to combat this limitation and uncertainty, they tend to build idiosyncratic representations of their environment which ultimately help them develop views of current events and activities and make strategic choices. Hence, it is these top executives' psychological orientation consisting of cognitions, beliefs, and values, not the objective, ever-changing environments that directly influence a firm's strategic orientation and drive decision-making. Further, Stubbart (1989), in his seminal work, argues that although many managers are "skilled at strategy making, adept organizational experts, and ingenious innovators" (p. 326), they do not think alike in terms of their "vision, expertise, risk-profiles, motivations, or goals". It is clear in this reasoning that when Stubbart (1989) refers to 'managers' cognition', he did not make a distinction between men versus women managers and potentially their cognitive differences. However, research has shown that it is plausible women and men managers/executives may not think and process alike in terms of their psychological orientations, and females can bring a unique portfolio of resources (different from their male counterparts) including distinct cognitive processing of information, risk preferences, and cache of knowledge to influence a firm's strategic actions. For example, Klenke (2003) suggested that four constructs such as power, political savvy, conflict management and trust mediate the link between female versus male executives and strategic decision making, not gender per se. Thus, given that strategic decision-making is a very essential aspect of human behavior and critically important in business settings, I review the literature on corporate leaders' strategic choices including risk-taking, negotiations

(Kray, Galinsky, and Thompson, 2002), ethical decision-making (Ibrahim, Angelidis, and Tomic, 2009; Hoffman, 1998), power maintenance (Muller-Kahle and Schiehl, 2013), help-seeking behaviors (Rosette, Mueller and Lebel, 2015) among others and whether gender matters in these relationships.

An important component of strategy formulation is risk-taking, and it is an essential human behavior that has been extensively studied, and the subject of numerous policy discussions (Slovic, Lichtenstein, and Fischhoff, 1988) in various contexts (e.g., health, crime tendencies). Although scholars hold different opinions in defining ‘risk-taking’, most of them use concepts such as values, options and goals (Slovic et al., 1988; Furby and Beyth-Marom, 1992) in defining it. These scholars argue that the act of adopting a goal-oriented and/or value-related choice is considered an instance of risk taking whenever two intertwined events are likely to occur: the action in question could result in more than one possible outcome and some of the outcomes are unwanted and even perilous for the entities involved (Furby and Beyth-Marom, 1992). Given such a definition, a wide range of behaviors can be considered as examples of risk-taking (smoking, crime, gambling, investment decisions, etc.) depending on the individuals’ risk perceptions. Using a behavioral agency model of managerial risk-taking, Wiseman and Gomez-Mejia (1998, p.136) have defined risk-taking as a “choice of investment risk from among the firm’s investment opportunities” and risk aversion as “preferring lower risk options at the expense of returns”. Byrnes, Miller, and Schafer (1999) suggest that risk-taking can either be “adaptive” or “maladaptive”. Specifically, they argue that whenever the potential damage of an activity is far more likely to occur than its benefits, then it is maladaptive. On the other hand, adaptive behavior involves people successfully adapting by regularly seeking out certain risks while avoiding others (Baumrind, 1991). CEOs as top decision-makers are not only responsible

for, and significantly influence their firms' strategic choices, but their characteristics and traits also critically affect organizational function (Finkelstein and Hambrick, 1989). Although upper echelon and sense making theories emphasize the effect of top managers' decisions on firm outcomes, they do not necessarily address the role of risk-taking attitudes on those decisions as well as whether the gender of an executive has a material impact on such decisions. The literature on the relationship between gender (of corporate leaders) and risk-taking behavior provide inconclusive findings. While several studies have shown support for the view that women leaders are more risk-averse than their male counterparts (Huang and Kisgen, 2013; Khan and Vieito, 2013; Levi et al., 2014; Elsaid and Ursel, 2011; Atkinson, Stanley, Baird, and Frye, 2003; Perryman, Fernando and Tripathy, 2016; Faccio, Marchica and Mura, 2016), others have demonstrated that women leaders are not less risk-tolerant, or even find women more risk-tolerant than their male counterparts (Adams and Funk, 2012; Berger, Kick and Schaeck, 2014; Adams and Rangunathan, 2017; Mukarram, Ajma and Saeed, 2018). Finally, several scholars (Mohan and Chen; 2004; Sila, Gonzalez and Hagendor, 2016) did not find a significant relationship between gender (of corporate leaders) and risk-taking behavior. Huang and Kisgen (2013), on the other hand, have found that male executives pursue acquisitions and issue debt more frequently than female executives do.

Levi et al. (2014), drawing from research on gender differences in risk propensity, examined the potential effect of board gender diversity on firms' merger and acquisition behavior. Analyzing the acquisition bids of S&P 1500 companies during 1997–2009, the authors find that for every additional women director on a board 7.6 % fewer bids were made, and each additional women director serving on a bidder board is associated with decreasing the bid premium by 15.4 %. This recent study also provides evidence for the notion that women

directors play important roles in creating shareholder value through their influence on corporate strategies. Further, contrary to the common perspective that risk-averse behavior of decision-makers directly hinders the company bottom-line, research shows that under certain conditions, pursuing less risky practices does not necessarily mean sub-optimal performance outcomes (Khan and Vieito, 2013). For example, Atkinson, Stanley, Baird, and Frye (2003) find that women fund managers achieved similar performance metrics compared to male managers even though they adopted a more prudent risk strategy. In line with these findings, Perryman, Fernando and Tripathy (2016) examine the influence of TMT gender diversity on firm risk and performance. Using data from 26,158 firm-year observations during 1992–2012, the authors find that greater TMT gender diversity is associated with lower firm risk and better performance. However, contrary to the findings that women leaders' risk-aversion may help create wealth for shareholders, Faccio, Marchica and Mura's (2016) study results, robust to endogenous matching between CEOs and firms, have shown that the low level of risk-tolerant behavior of women CEOs undermines the efficiency of the capital allocation process. Although the underlying mechanisms behind this finding were not empirically examined, they attribute this finding to two factors: women CEOs either underinvest in opportunities that provide positive net present value and "leave the money on the table," or they "overinvest" by not divesting the business units or projects with negative net present values due to their risk-aversion. A review of empirical studies examining the association between female (vs male) leaders and their strategic decision making in various organizational contexts is presented in Table 6. Overall, although research has extensively examined the female leadership antecedents and firm outcomes, literature is missing the link as to whether and under what conditions female CEOs initiate strategic change, conform to industry standards, and undertake organizational innovation.

Table 6: Female Corporate Leaders and Strategic Decision-making

Author(s) and Year	Theory Used	Unit of analysis	Context	Sample Used	Findings
Hoffman (1998)	Situational dynamics" theory	Individual	Gender and ethical decision-making	171 three levels of managers	Female and males' ethical decision-making is contingent upon situational factors (ethical issue/strategic conditions). For example, females engage in more ethical decision-making in some but not all situations.
Kray, Galinsky and Thompson (2002)	Stereotype threat	Individual	Gender stereotype and negotiations	22 full-time and evening M.B.A. students	Females performed better in mixed-gender negotiations when stereotypically feminine traits were associated with successful negotiating, but not when gender-neutral traits were linked to negotiation success.
Parker (2002)	Gender identity research and strategic communication	Individual	Gender identity and strategic communication	15 African American women senior executives	African-American female executives perceive challenges when interacting with white male and African-American peers and clients and tend to adopt resistance strategies or transform perceived challenges in their workplace interactions.
Klenke (2003)	Gender research	Individual	Gender and decision making in TMTs	N/A	They found that it is not gender that explains for differences in decision making among senior female and male executives. In fact, power, political savvy, conflict management and trust mediate

					the relationship between the female or male executives and decision-making process.
Ibrahim, Angelidis and Tomic (2009)	Care ethics	Individual	Code of ethics and managers' attitudes	286 pharmacy managers	Female managers were more optimistic about the effects of code of ethics on pharmacists' behavior, efficiency, and industry growth.
Nielsen and Huse (2010)	Group effectiveness and gender differences theories	Female directors	Female directors and board effectiveness	201 Norwegian firms	The proportion of female directors is positively linked to board strategic control and the link between female directors and board effectiveness is mediated by enhanced board development practices and reduced degrees of conflict.
Melero (2011)	Kanter's theory of proportions	Multilevel	Females and leadership styles	Managers in 2193 workplaces in U.K	Workplace management team with higher percentage of females provide more intense feedback and development practices while also encourage more interpersonal communications and employee engagement in decision-making.
Elsaid and Ursel (2011)	N/A	Individual	CEO succession, gender and risk taking	79 CEO successions	The greater proportion of female directors leads to higher likelihood of female CEO succession. A change in CEO from male to female is linked to a decrease in several measures of firm risk taking.

Muller-Kahle and Schiehl (2013)	Status characteristics theory and human capital theory	Individual	Female CEO and power structure	65 female CEOs	Female CEOs do not have the same structural power as their male-counterparts (measured as holding a dual CEO/Chair role). Female CEOs are often appointed to less powerful roles of CEO and President.
Faccio, Marchica and Mura (2014)	N/A	Female CEOs	Corporate risk-taking and the efficiency of capital allocation	Amadeus Top 250,000 firms from 18 countries	Firms led by female CEOs have lower leverage, less volatile earnings, and a greater chance of survival than otherwise similar firms led by male CEOs.
Huang and Kisgen (2013)	N/A	Female and male CEOs and CFOs	Risk- taking, corporate financial and investment decisions	Executives for 12,348 firm years	Male executives engage in more acquisitions and issue debt more often than female executives. Acquisitions made by firms with male executives have announcement returns approximately 2% lower than those made by firms with female executives. Also, cumulative abnormal returns surrounding debt issue announcements are lower for firms with male executives.
Kakabadse, Figueira, Nicolopoulou, Hong Yang, Kakabadse and Özbilgin (2015)	Bourdieu's theory	Individual	Female director experience and board performance consequences	30 companies with female directors in the United Kingdom, the United States, and Ghana	Female presence on boards does not have a significant effect on board's performance. However, chairs play crucial roles in changing the recruiting practices and evaluating the candidates.

Rosette, Mueller and Lebel (2015)	Role congruity theory and the status incongruity theory	Individual	Gender and help-seeking behaviors	65 business students	Help- seeking behavior is negatively associated with perceived competence for male leaders, but not for female leaders.
Chen, Crossland and Huang (2016)	social identity theory	Women directors	mergers and acquisitions (M&A)	U.S. S&P 1500 firms from 1998 to 2010	Greater proportion of women directors on boards is negatively related to both the number of acquisitions and target acquisition size a firm involves.
Perryman, Fernando, and Tripathy (2016)	Upper echelons theory and prospect theory	Female executives	Risk taking, executive compensation, and firm performance	2566 firms	Firms with greater gender diversity in TMTs face lower risk and create better performance. Female executives are found to be paid less than their male colleagues, even at the TMT level. However, as gender diversity in the TMT increases, compensation differences between male and female TMT members decrease.
Sila, Gonzalez and Hagendor (2016)	Research on gender and risk-taking	Women directors	Equity risk	1,960 firms between 1996-2010	No evidence was found on the relationship between women board presence and equity risk.
Jeong and Harrison (2017)	Role incongruity theory	Individual and group-level	Female CEOs and strategy making	146 primary studies conducted in 33 different countries	Female CEOs are less likely to involve in risky strategic choices that are potentially detrimental to firm performance and such behavior mediates the positive relationship between female CEO leadership and long-term firm performance. However, female CEO presence

					is negatively and weakly associated with short-term stock market returns.
Crijns, Claeys, Cauberghe and Hudders (2017)	Situational crisis communication theory	Individual	Gender and crisis response strategy	199 respondents from a Western European country	Gender similarity between the firm's spokesperson and the stakeholder (affected party by the crises) is advantageous for organizational reputation because it enhances stakeholders' empathy toward the spokesperson. However, this effect is only found if the spokesperson employs an appropriate crisis response strategy (a rebuilt strategy than a denial one).
Mukarram, Ajma and Saeed (2018)	Agency and behavioral theories	Women directors	Risk taking and R&D spending	71 listed technology firms on the National Stock Exchange of India	There is a positive relationship between the presence of women directors on technology firms and their risk-taking behavior (measured in terms of R&D spending), which is in contrast to the traditional notion that women are risk-averse.
Wowak, Ball, Post, and Ketchen (2020)	Social responsibility literature	Women directors	Product recalls	4,271 medical product recalls from 2002 to 2013 across 92 publicly traded firms	Firms make more product recalls that are low in severity as they add more female directors to their boards. Also, firms make faster recall decisions for high severity product recalls resulting from adding more female directors.

2.4 Overview of Strategic Change, Conformity, and Innovation

2.4.1 Strategic Change and Conformity

Because strategic change is a deviance from the current firm strategy and the direction which may lead to variability of financial returns and the threat of incurring losses for the focal firm (Jeong and Harrison, 2017), it is essential to examine the underlying mechanisms that lead strategic decision makers to initiate change. For example, several studies have explored the effect of firms' internal dynamics on firms' strategic change by investigating TMT and CEO characteristics (Cho and Hambrick, 2006; Boeker, 1997; Finkelstein and Hambrick, 1990; Geletkanycz and Hambrick 1997; Wiersema and Bantel, 1992), executive succession and CEO origin (Karaevli and Zajac, 2013; Quigley and Hambrick, 2012; Zhang and Rajagopalan, 2010; Fondas and Wiersema, 1997), CEO compensation (Carpenter, 2000), and board dynamics and composition (Miller, Breton-Miller and Lester, 2013; Westphal and Frederickson 2001). For example, Wiersema and Bantel (1992) found that TMTs with lower average ages, shorter organizational tenures, higher educational levels, greater specialized educational heterogeneity and more education in sciences are associated with greater strategic change. Similarly, Cho and Hambrick (2006) found that following deregulation in the airline industry, TMTs shifted their managerial attention, and this shift was pronounced when TMT composition and pay structure were aligned with the deregulated regime. Another highly examined domain in strategic change has been the effect of CEO succession and origin. For example, Zhang and Rajagopalan (2010) documented that outside CEO succession (compared to insider CEOs) was associated with negative performance effects resulting from strategic change when the level of strategic change was high, but positive effects on performance when the strategic change level was low. Karaevli

and Zajac (2013), on the other hand, found that new CEO outsidership has no significant main effect on post-succession strategic change. However, corporate stability (ordinary succession, long-tenured predecessor CEO and strong firm performance) seems to enable new outsider CEOs to initiate change.

Meanwhile, strategic conformity is defined as “the degree to which the firm's business strategy profile adheres to central tendencies of the industry” (Geletkanycz and Hambrick, 1997, p.666). Strategic conformity occurs when executives fail to initiate strategic change in response to major organizational or environmental factors (Westphal and Bednar, 2005; Delgado-Garcia and Fuente-Sabate, 2010; Finkelstein and Hambrick, 1990). Studies to date have argued that the determinants of strategic conformity stem from organizational (Miller and Chen, 1995) and managerial factors (Hiller and Hambrick, 2005; Finkelstein and Hambrick, 1990; Geletkanycz and Hambrick, 1997). For example, while firm executives have been found to overattribute declining firm performance to rather turbulent and momentary conditions in the external environment, they tend to under-attribute poor performance to existing firm strategy (Westphal and Bednar, 2005; Salancik and Meindl, 1984; Barker and Duhaime, 1997), and as a result align their attitude with the current firm strategy. Further, several recent studies have found that CEO personal traits matter in determining the strategic direction a firm pursues. For example, Tang, Crossan and Rowe (2011) showed that dominant CEOs tend to launch strategies deviant from industry norms and thus lead to extreme performance – either big wins or big losses. Also, Delgado-García and De La Fuente-Sabaté (2010) have shown that CEOs’ negative affective traits are associated with more strategic conformity and performance measures aligned with

industry averages, whereas positive affective traits appear to result in strategies that deviate from the central tendencies of the industry norms.

In Table 7 below, I present studies of the relationship between leadership antecedents and strategic change and strategic conformity. However, the literature provides us few insights into how board and TMT gender diversity impact strategic change and conformity. To the best of my knowledge, there are only two studies examining the female leadership-strategic change relationship. One by Triana, Miller, and Trzebiatowski (2013) examined a three-way interaction among board gender diversity (combined with women directors having greater power), firm performance, and strategic change and found that firms pursue strategic change when firm performance is high and there are powerful female directors. Also, López Yáñez and Sánchez Moreno (2008) documented that female leaders tend to drive changes and protect the workplace climate while adopting a flexible leadership style. Although these two studies provide important insights about how female leaders affect change, the contexts, settings, and sample used in these two studies are substantially different than the current study's focus. Specifically, while López et al.'s (2008) study examined female leaders in higher education (non-profit institutions), Triana et al.'s study (2013) specifically examined the effect of board gender diversity on strategic change. However, the effect of a female CEO on corporate strategic change and conformity in large corporations is still largely underexplored in the literature and I seek to examine this relationship in this dissertation.

2.4.2 Organizational Innovation

At the organizational level, “an innovation can be a new product or service, a new production process technology, a new structure or administrative system, or a new plan or

program pertaining to organizational members” (Damanpour, 1991, p. 556). While early studies of organizational innovation mostly focused on administrative innovation (Ettlie and Reza, 1992; Damanpour, 1991; Damanpour, Szabat and Evan, 1989; Daft, 1978), which focuses on changes in human resources practices and organizational structure, most other recent studies emphasized the importance of understanding the management of innovation (Damanpour and Aravind, 2011; Battisti and Stoneman, 2010; Hamel, 2009; Mol and Birkinshaw, 2009; OECD, 2005). Although the definitions of administrative, organizational and management definitions overlap (Damanpour and Aravind, 2011, p.35), I concur with the definition suggested by the Organization for Economic Cooperation and Development (OECD) as it seems more comprehensive in addressing various types of innovative activities. Specifically, the OECD (2005) defines organizational innovation as activities involving the implementation of new methods for business practices, workplace organization or external relations. Further, in the OSLO manual (an OECD document on the measurement of scientific and technological activities, proposed guidelines for collecting and interpreting technological innovation data), innovation is classified into four categories: product innovation, process innovation, marketing innovation, and organizational innovation (OECD, 2005). While technological innovation encompasses product and process innovation, non-technological innovation includes marketing and organizational innovations. In this dissertation, I focus on all types of innovation defined in the OECD manual.

Innovation is an important organizational process in strategic management given that innovative strategies and activities are critical elements for achieving firm survivability (Li and Calantone, 1998) sustainable competitive advantage (Damanpour and Wischnevsky, 2006;

Damanpour and Schneider, 2006) and subsequent firm performance (Camisón and Villar-López, 2014; Makri, Lane and Gomez-Mejia, 2006; Calantone, Cavusgil, and Zhao, 2002; Mone, McKinley and Barker III, 1998; Cooper and Kleinschmidt, 1987; Jose, Nichols, and Stevens, 1986). For example, Jose et al., (1986) found that deviations in R&D intensity from industry norms, above or below, were detrimental to firm value. Given that innovation practices may have detrimental/favorable firm consequences, it has received a wealth of attention from scholars of different disciplines. For example, several past and recent studies have examined the antecedents and contextual determinants of innovation (Anderson, Potocnik, and Zhou, 2014; Camison, et al., 2014; Damanour, 1991). For example, in a meta-analysis, Damanour (1991) examined the association between organizational innovation and its 13 proposed determinants (individual and organizational level): specialization, functional differentiation, professionalism, centralization, managerial attitude toward change, technical knowledge resources, administrative intensity, slack resources, and external and internal communication, and found support for each. In a more recent review of creativity and innovation in organizations, Anderson et al. (2014) have suggested an integrated definition of creativity and innovation while also comprehensively developing a framework that encompasses individual, team, organizational, and multilevel level analysis of organizational innovation. The authors proposed an integrative definition of creativity and innovation arguing that creativity and innovation should be understood as a process, where “...The creativity stage of this process refers to idea generation, and innovation refers to the subsequent stage of implementing ideas toward better procedures, practices, or products...” and this process may occur at different levels of analysis. In Anderson et al.’s (2014) review, individual level analysis included individual level determinants of innovation/creativity such as

traits (Raja and Johns, 2010), values (Choi and Price, 2005), thinking styles (Miron-Spektor, Erez, and Naveh, 2011), self- concepts and identity (Mok and Morris, 2010; Tierney and Farmer, 2002), job complexity (Tierney and Farmer, 2004), and leadership styles (Bono and Judge, 2003; Shin and Zhou, 2003) among others. Team level determinants of innovation/creativity included factors such as team structure and composition (Hülshager, Anderson, and Salgado, 2009; Shin and Zhou, 2007; Somech, 2006), and team leadership (Chi, Chung, and Tsai, 2011; Mumford, Scott, Gaddis, and Strange, 2002). Further, the research on the organizational level determinants of creativity/innovation have been quite comprehensive, involving factors such as structure and strategy (Cohendet and Simon, 2007; Damanpour and Schneider, 2006), knowledge utilization and networks (Kyriakopoulos and De Ruyter, 2004; Phelps, 2010), slack resources (George, 2005; Greve, 2003), external environment (Damanpour, 2010; Lahiri, 2010), and management-related factors (Latham and Braun, 2009; Jung, Wu, and Chow, 2008; Wu, Levitas, and Priem, 2005; Richard, Barnett, Dwyer, and Chadwick, 2004; Jung, Chow, and Wu, 2003).

Although all of these factors play important roles in predicting the determinants of innovation, given the scope of this dissertation, I limit my focus to the leadership-related antecedents. Several studies have examined the role of management support in organizational innovation in terms of CEO's transactional and transformational leadership (Jung et al., 2003; Jung et al., 2008) and top managers' favorable attitudes towards innovation (Damanpour and Schneider, 2006). For example, two studies, surveying a sample of 53 Taiwan firms' top managers, have shown that transformational leadership is directly and positively related to organizational innovation (measured as R&D expenditure) and this relationship is positively and significantly mediated by empowerment, support for innovation, centralization, formalization,

competition and environmental uncertainty (Jung et al., 2003; Jung et al., 2008). Also, Damanpour and Schneider (2006), using a sample of 1200 public organizations in the United States, have found that top managers' attitudes toward innovation have a stronger influence on the initiation and implementation of innovation than environmental and top managers' demographic characteristics have. On the other hand, other studies have shown that top managers' demographic characteristics, such as management or CEO tenure, and attitudes toward innovation among others (Heyden, Reimen, and Van Doorn, 2017; Chen, 2013; Chen, Ho, and Hsu, 2013; Makri and Scandura, 2010; Wu, Levitas, and Priem, 2005; Damanpour and Schneider, 2006; Elenkov, Judge and Wright, 2005; Dechow and Sloan, 1991; Daellenbach, McCarthy and Schoenecker, 1999; Damanpour, 1991) are significantly related to organizational innovation. Also, the literature on CEO pay, learning orientation, and outsider/insider status antecedents of organizational innovation is extensive (Cummings and Knott, 2018; Balsmeier and Buchwald, 2014; Cabrales, Medina, Lavado and Cabrera, 2008; Makri, Lane and Gomez-Mejia, 2006; Calantone, Cavusgil, and Zhao, 2002; Balkin, Markman and Gomez-Mejia, 2000; Boeker, 1997). For example, Barker and Mueller (2002) have argued for the significance of top executives' attributes in allocating corporate resources and examined how CEO characteristics affect a firm's R&D spending as compared to industry competitors. The authors found that younger CEOs with greater wealth invested in firm stocks and significant career experiences in marketing and/or engineering/R&D tend to spend more on R&D. In an attempt to capture unobservable CEO characteristics, Mao and Zhang (2018) in their recent study examined CEO risk attitudes and innovation, finding a positive relationship between CEOs' risk incentive and

innovation activities. In other words, CEOs' reduced risk incentives lead to a reduction in innovative activities measured as the number of explorative patents.

Another area that has received scholarly attention is the association between the gender diversity of boards or TMTs and organizational innovation in various forms. For example, Richard et al., (2004) found moderate levels of gender diversity of management groups positively affects performance yielding advantages in high-risk strategic contexts. Similarly, Turner (2009) found that the innovative performance of R&D teams is enhanced by more gender balance at the team level. In fact, Dezsö and Ross (2012) found further evidence for this finding at the TMT level and showed that female presence in TMTs improves firm performance, but only to the extent that a firm's strategy is focused on innovation. In a related vein, other studies have shown that gender diversity on corporate boards is positively associated with innovative activities (Galia and Zenou, 2012; Torchia, Calabrò and Huse, 2011; Miller and Triana, 2009) and mitigates the adverse effect of R&D on the cost of debt (Chen, Ni, and Tong, 2016). These and other related studies seem to provide empirical support for the 'business case' for gender diversity. However, the literature is missing an examination of the effect of female CEOs on organizational innovation. Thus, I intend to fill this research gap in this dissertation by examining whether and under what circumstances female CEOs, compared to their male-counterparts, influence organizational innovation as measured by R&D intensity and new product introduction. Finally, in Table 7 below, I present a large body of studies on the relationship between leadership antecedents and strategic change, organizational innovation and strategic conformity.

Table 7: Leadership Antecedents of Strategic Change, Conformity, and Organizational Innovation

Author(s) and Year	Firm Strategy	Theory Used	Unit of analysis	Context	Sample Used	Findings
Wiersema and Bantel (1992)	Strategic change	Upper echelons theory	Group-level	TMT and strategic change	100 firms of Fortune 500	TMTs with lower average age, shorter organizational tenure, higher educational level, higher specialized educational heterogeneity and higher education in sciences are positively associated with strategic change.
Fondas and Wiersema (1997)	Strategic change	Socialization theory	N/A	CEO socialization and strategic change	N/A	Study develops a framework exploring the effect of socialization process on the link between CEO succession and strategic outcomes.
Boeker (1997)	Strategic change	Upper echelons theory	Firm level	TMT and CEO characteristics and strategic change	67 semiconductor producers	Long CEO and TMT tenure, high diversity in TMT and poor firm performance are related to higher degrees of strategic change.
Carpenter (2000)	Strategic change	Agency theory	Firm level	CEO pay and strategic variation and deviation from industry	314 U.S. firms	CEO pay structure is found to affect strategic change. The effect of pay on strategic change is positive under the

				strategic norms		conditions of low firm performance and it is negative when firm performance is high.
Westphal and Frederickson (2001)	Strategic change	Built a theory of board-directed strategic change where directors adopt the strategies of their home company and appoint CEOs with experience on similar strategies	Firm level	Board experience, CEO succession and strategic change	406 companies	New CEO experience predicts the corporate strategic change; however, such effects diminish after accounting for board experience. Thus, executive effects appear to conceal the board's effect on strategic change.
Westphal and Bednar (2005)	Strategic change	Theory of pluralistic ignorance	Multilevel	Board of directors and strategic persistence	603 directors from 174 companies	Directors' concerns about current corporate strategy were less likely to result in subsequent strategic change when directors perceive that other board members do not share similar concerns about the issues they care (termed as pluralistic ignorance).
Cho and Hambrick (2006)	Strategic change	Upper-echelons perspective and attention-based	Group level	TMT characteristics, attention and	30 airline companies	Following deregulation, firm TMTs shifted their managerial attention, and

		view		strategic change		this shift was at higher levels in TMTs with changed composition and pay structure that aligned with the deregulated regime.
López Yáñez and Sánchez Moreno (2008)	Strategic change	Leadership theory	Female leaders	Female leaders and change in higher education	136 female leaders and two cases in Spanish universities	Female leaders tend to drive changes and protect the workplace climate while adopting a flexible leadership style.
Quigley and Hambrick (2012)	Strategic change	Upper echelons theory	Individual level	Predecessor CEO retention and strategic change and performance	181 successions in high technology firms	A predecessor CEO's continuing presence (as chair) have a negative effect on new CEO discretion, inhibiting her/his ability to engage in strategic change and deviate from the pre-succession performance metrics.
Zhang and Rajagopalan (2010)	Strategic change	Upper echelons theory	Individual level	CEO origin, strategic change and performance	193 CEOs	Outside CEO presence, compared to insider CEOs, lead to a negative effect of strategic change on performance when the degree of change is high and positive effect of strategic change on firm performance when the level of change is low.

Karaevli and Zajac (2013)	Strategic change	Strategic leadership	Multilevel	CEO origin, corporate stability and strategic change	110 firms and 216 succession observations	New CEO outsidership seldom has no significant main effect on post-succession strategic change, however, corporate stability (ordinary succession, long-tenured predecessor CEO and strong firm performance) enables new outsider CEOs to initiate strategic change.
Triana, Miller and Trzebiatowski (2013)	Strategic change	Threat-rigidity theory the team diversity literature	Multilevel	Board gender diversity and strategic change	462 Fortune 500 firms	Firms pursue strategic change when firm performance is high and when they have powerful female directors on boards. However, the relationship between board gender diversity and the degree of strategic change is negative when the firm performance is low and there are female directors with greater power.
Finkelstein and Hambrick (1990)	Strategic conformity	Upper echelon theory	Group-level	TMTs and strategic conformity	100 companies	Long-tenured TMTs pursue persistent strategies that are aligned with industry norms and demonstrate performance

						that is close to industry averages.
Geletkanycz and Hambrick (1997)	Strategic change and conformity	A behavioral theory of the firm	Multilevel	External ties of executives and strategic choices	30 large firms in food and computer industries	While executives' interindustry ties are associated with strategic conformity, the extra-industry ties are related to strategic change. Differentiated and unique strategies are not universally advantageous and knowledge accumulations from strategic conformity are beneficial in complex computer industry.
Delgado-García and De La Fuente-Sabaté (2010)	Strategic conformity	Upper echelon theory and managerial discretion	Individual	CEO emotions and strategic and performance conformity	56 Spanish banks	CEOs' negative affective traits are associated with more strategic conformity and performance measures that are aligned with industry averages, whereas positive affective traits appear to result in strategies that deviate from the central tendencies of the industry norms.
Tang, Crossan, and Rowe	Strategic conformity	Neo-institutional theory	Individual level	Dominant CEOs and	51 public single-	Dominant CEOs tend to launch strategies that are

(2011)				deviant strategy	business firms from the US computer industry	deviant from the industry norms which then lead to extreme performance metrics – either big wins or big losses.
Miller, Breton-Miller and Lester (2013)	Strategic conformity	Institutional and socioemotional wealth perspectives	Firm level	Family firm governance and strategic conformity	898 companies	Family presence in firms is associated with higher degrees of strategic conformity that is with aligned industry norms, however such conformity does not improve market valuations of the firms.
Damanpour (1991)	Organizational innovation	N/A	Meta-analysis	Innovation	23 empirical studies	The relationships between the thirteen determinants (managerial attitude, professionalism, etc.) and innovation are stable.
Boeker (1997)	Organizational innovation	Upper echelon theory	Individual (top executives)	Product-market entry and strategic change	67 Semiconductor firms	The effects of executive migration on product-market entry are stronger when the new executives come from R&D and engineering background, when they report to the CEO in their former organization, and when they had greater industry experience.

Dechow and Sloan (1991)	Organizational innovation	N/A	Individual (CEOs)	R&D expenditures	91 firms	CEOs spend less on R&D during their final years in office.
Daellenbach, McCarthy and Schoenecker, (1999)	Organizational innovation	N/A	Individual/team (CEOs/TMT)	Commitment to Innovation	57 firms in metals and semi-conductor industry	There is a positive relationship between the technical orientation of the TMT/CEO and the above-average R&D intensity.
Balkin, Markman and Gomez-Mejia (2000)	Organizational innovation	Resource-based view / agency theory	Individual (CEOs)	Innovation	74 low and 90 high technology firms	An empirical relationship exists between innovation (measured by number of patents and R&D spending) and CEO short-term pay in high-technology firms.
Calantone, Cavusgil, and Zhao (2002)	Organizational innovation	Organizational learning theory	Individual (R&D vice presidents)	Firm innovativeness and firm performance	25 in-depth field interviews	Executive learning orientation is central not only to innovation but also to the organization's other activities (firm performance).
Richard, Barnett, Dwyer and Chadwick (2004)	Organizational innovation	Blau's (1977) theory of heterogeneity	Multiple level (executives, managers)	Entrepreneurial orientation-innovation, and firm performance	153 individuals	Innovativeness positively and risk taking negatively moderated the nonlinear relationship between heterogeneity (racial and gender) and firm performance.

Elenkov, Judge and Wright (2005)	Organizational innovation	Upper echelon theory, full range of leadership view, and visionary leadership view	Individual (the presidents, managing directors, or CEOs)	Executive innovation influence	290 single-business firms	There is a strong positive relationship between executive influence and product–market and administrative innovations.
Makri, Lane and Gomez-Mejia (2006)	Organizational innovation	Agency Theory	Individual (CEOs)	Innovation and performance	206 firms from 12 U.S. manufacturing industries	CEO incentives are associated with two indicators of innovative behaviors: invention resonance and science harvesting.
Damanpour and Schneider (2006)	Organizational innovation	N/A	TMT members	Adoption of innovation	1200 public organizations in the United States	Organizational characteristics and top managers' attitudes toward innovation have a stronger influence on the adoption of innovation (the initiation, adoption decision and implementation of innovation) than environmental and top managers' demographic characteristics have on the adoption of innovation.
Cabrales, Medina, Lavado and	Organizational innovation	N/A	Multilevel (CEOs and R&D)	Radical innovativeness	95 firm from four innovative	Team diversity and incentives are associated with incremental

Cabrera (2008)			manager, and employees)		industries	innovation, whereas the development of risk-taking attitudes within the team is associated with radical innovation.
Miller and Triana (2009)	Organizational innovation	Signaling theory and behavioral theory of the firm	Individual (female directors)	R&D expenses	432 firms	Study finds a positive relationship between board gender diversity and innovation.
Turner (2009)	Organizational innovation	N/A	Multilevel	R&D performance	1506 research mangers	The innovation performance of both individuals and teams would be increased by more gender balance at the team level
Jung, Wu, and Chow (2008)	Organizational innovation	Leadership theory	Individual (CEOs)	Firm innovation	53 Taiwanese firms	Transformational leadership increases the organizational innovation and this relationship is indirectly mediated by empowerment, climate of support for innovation, centralization, formalization, competition, and environmental uncertainty.
Makri and Scandura	Organizational innovation	Strategic leadership theory	Individual (CEOs)	Innovation	77 high-technology	CEOs who are able to create new knowledge

(2010)					firms	and new applications of this knowledge in the external market are more effective in influencing innovation productivity.
Francis, Hasan and Sharma, (2011)	Organizational innovation	N/A	Individual (CEOs)	Innovation	S&P 400, 500, and 600 firms	CEO Long-term incentives in the form of stock options is positively related to patents and citations to patents.
Galasso and Simcoe (2011)	Organizational innovation	N/A	Individual (CEOs)	Innovation	627 CEOs	Overconfident CEOs, who underestimate the probability of failure, are more likely to pursue innovation, and this effect is larger in more competitive industries.
Torchia, Calabrò and Huse (2011)	Organizational innovation	Critical mass theory	Individual (female directors)	Firm innovation	317 Norwegian firms	Reaching a critical mass of women directors on boards enhances the levels of firm innovation.
Lin, Lin, Song and Li (2011)	Organizational innovation	N/A	Individual (CEOs)	Innovation effort (R&D intensity) and innovation performance	1,088 private manufacturing firms in China	The presence of CEO incentive design increases both the corporate innovation efforts and innovation performance. Additionally, CEOs' background

						characteristics are positively related to innovation efforts.
Dezsö and Ross (2012)	Organizational innovation	Upper echelon theory and gender in organizations	Female TMT members	R&D intensity	S&P 1,500 firms	Female representation in top management improves firm performance, but only to the extent that a firm's strategy is focused on innovation.
Galia and Zenou (2012)	Organizational innovation	N/A	Female directors	Product, process, organizational and marketing innovation	176 French firms	There is a significant and positive relationship exists between gender diversity on boards and marketing innovation, and a negative relationship exists between gender diversity and product innovation.
Chen (2013)	Organizational innovation	Agency theory	Individual (CEOs)	Innovation	228 Taiwanese Firms	An inverted-U relationship between CEO tenure and corporate innovation (R&D intensity and patents) exist. This finding supports the view that CEOs experience life cycles.
Chen, Ho and Hsu (2013)	Organizational innovation	Resource dependency theory	Team level (board)	R&D development	330 Taiwanese Firms	Board social capital strengthens the positive relationship between

						CEO educational level and R&D investment. Also, board social capital eliminates the negative relationship between CEO tenure and R&D investment.
Chen, Tang, Jin, Xie and Li, (2014).	Organizational innovation	N/A	Individual/team (CEOs/TMT)	Product Innovation Performance	151 firms	Corporate entrepreneurship mediates the process through which CEO's transformational leadership has an impact on product innovation performance.
Balsmeier and Buchwald (2014)	Organizational innovation	Upper echelon and knowledge-based view	Individual (CEOs)	Innovation	Less than 100 German firms	Insider CEOs are associated with higher levels of innovative (patent applications) activities compared to their externally hired counterparts.
Chen, Ni, and Tong (2016)	Organizational innovation	Gender socialization theory	Individual (Female directors)	R&D investment and risk-management	3,714 firms	Firms with more gender-diverse boards exhibit a lower adverse effect of R&D on the cost of debt.
Heyden, Reimer and Van Doorn (2017)	Organizational innovation	Agency theory and upper echelon theory	Individual/team (CEOs/TMT)	R&D intensity	100 US manufacturing firms	Both TMT tenure and TMT age play important roles in influencing CEOs' tendencies to cut back on R&D.

Cho and Kim (2017)	Organizational innovation	N/A	Individual (CEOs)	Breakthrough innovations	681 U.S. firms	Firms that have CEOs with short career horizons tend to produce fewer breakthrough innovations.
Sariol and Abebe (2017)	Organizational innovation	Behavioral agency theory	Individual (CEOs)	Explorative and exploitative innovation	150 U.S. firms	There is a positive relationship between CEO power and explorative innovation.
Katila, Thatchenkery, Christensen and Zenios (2017)	Organizational innovation	Evolutionary theory	Individual (expert-users)	Innovation	231 surgical instrument ventures	Surgeon-executives are less likely to be helpful and more likely to block innovations as chief executives.
Tuncdogan, Boon, Mom, Van Den Bosch and Volberda (2017)	Organizational innovation	Regulatory focus theory	Individual	Explorative innovation	748 managers	Promotion focus of a unit's management team relates positively to the unit's exploratory innovation.
Cummings and Knott (2018)	Organizational innovation	N/A	Individual (CEOs)	Innovation	7,182 firm-year observations	Firms' R&D productivity deteriorate during the tenure of outsider CEOs relative to that of insider CEOs.
Han (2018)	Organizational innovation	Behavioral consistency theory	Individual (CEOs)	Innovation	695 U.S. firms	Firms with Republican CEOs tend to have lower levels of corporate innovations (measured

						by the number of patents and subsequent citations).
Mao and Zhang (2018)	Organizational innovation	N/A	Individual (CEOs)	Innovation	6,552 firm-year observations	CEO's risk incentive has an effect on innovation activities, but lower levels of risk incentives leads to reduction in innovation.
Griffin, Li, and Xu (2021)	Organizational innovation	N/A	Individual (Female directors)	Firm patents	12,244 firms for the period 2001–2014	Corporations with board gender diversity generate more and novel patents, and a higher innovative efficiency. In addition, authors showed that female director representation is associated with more innovative corporate cultures and more diverse inventors.

2.5 Chapter Summary

With the growing number of female leaders serving on corporate boards and top management teams, scholars from different disciplines have been exploring whether and how female leaders affect firm outcomes (Post and Byron, 2015; Low, Roberts and Whiting, 2015; Triana, 2009; Campbell and Mínguez-Vera, 2008; Singh, Vinnicombe, and Johnson, 2001). Although a large body of work from various disciplines has explored the firm performance consequences of female leadership, the findings remain inconclusive; some scholars finding board gender diversity (and female TMT members in other studies) improving firm performance while others document a negative relationship between female leaders and firm performance. Also, the cross-disciplinary review of the appointment and consequences of female leaders provided important perspectives and revealed intriguing findings. For example, while finance and economics literature mostly focused on the risk attitudes of female leaders and how it differs from their male counterparts, sociology and psychology literatures have provided insights into how female leadership is often seen in the light of women's unique leadership style, social role, sex role stereotypes, leadership effectiveness, and work-family balance. Also, gender studies literature has prepared the ground for other disciplines in understanding how organizations view gender and whether it is embedded into the organizational culture and structure (Acker, 1990). Moreover, management research has advanced the female leadership research stream by providing one of the most comprehensive bodies of research on female leadership and its organizational antecedents and consequences. The essence of all the scholarly efforts around female leaders is to fathom their strategic decision-making and how it impacts various firm strategies and outcomes. Thus, I aim to extend the existing theoretical and empirical research in

understanding how and under what conditions female CEOs impact firms' strategic conformity, change, and organizational innovation.

CHAPTER III

THEORY AND HYPOTHESES DEVELOPMENT

In this chapter, I begin with providing a discussion on the stereotype threat (Inzlicht and Schmader, 2012) and expectancy-violation theories (Jussim, Coleman, and Lerch, 1987) as the backdrop for developing the hypotheses for strategic change and organizational innovation. Next, I discuss the core tenets of socialization theory and explain how it can inform the socio-political dynamics female CEOs go through those results in their pursuit of strategic conformity. Then, I present the research model of this dissertation in Figure 3 below and provide a brief overview explaining the hypothesized relationships among female CEO leadership, strategic change, strategic conformity and organizational innovation.

3.1 “Hawkish” Posture: Do Female CEOs Engage in Strategic Change and Organizational Innovation?

Gender researchers have provided extensive evidence that female leaders, compared to their male counterparts, are more likely to be viewed as “token” leaders (Kanter, 1977) and face identity (stereotype) threats (Sekaquaptewa and Thompson, 2003). Consequently, they endure harsh scrutiny, and overly critical performance evaluations from their male counterparts (Torchia, Calabro, and Huse, 2011; Konrad, Kramer, and Erkut, 2008; Elstad and Ladegard, 2012; Lee and James, 2007). Identity (or stereotype) threat theory has been extensively used by social psychology scholars (e.g., Steele and Aronson, 1995; Steele, 1997; Spencer, Steele, and

Quinn, 1999; Kray, Thompson and Galinsky, 2001; Steele, Spencer, and Aronson, 2002; Inzlicht and Schmader, 2012) in understanding the gender dynamics at the individual and societal levels. Research has shown that stereotype threat emerges when individuals realize that they will be devalued based on their associations with certain categories such as women, different ethnic and/or racial groups (Branscombe, Schmitt, and Harvey, 1999; Steele et al., 2002). Often times, they face negative stereotypes about their group's ability and standing in the society (Inzlicht and Schmader, 2012). For example, Inzlicht and Schmader (2012), through their 'identity engagement model' have described how identity threat influences individuals' performance and learning over time. They argue that individuals' group identity will be psychologically activated if they think they will be judged and adversely treated on the basis of their attachment to (stigmatized) social groups. Their model further suggests that once people are actively engaged with their identity, they tend to become more vigilant of their environments and look for cues either affirming or refuting potential 'identity threats'. For example, if a female manager in our case receives verbal and/or nonverbal cues regarding her identity (e.g., receiving comments that they are appointed as a token and/or hostile comments on her gender and perceived ineffectiveness), then it can be concluded that she affirms the presence of 'identity threat'. On the other hand, if a female manager feels welcomed and valued in a new environment and the verbal and/or nonverbal cues from the socialization agents does not trigger an 'identity threat', then it is plausible to conclude that she disconfirms the presence of 'identity threat'.

There are two possible scenarios for identity-engaged people: (a) cues disconfirm identity threat-individuals perceive that they are not facing stereotype threat and continue working on the task at hand without any psychological interventions, or (b) cues confirm an identity threat.

While an individual's performance is contingent upon task-related factors (e.g., feedback, competence etc.) in the first scenario (absence of stereotype threat), the performance outcomes are largely dependent upon how an individual responds to the stereotype threat in the second scenario (cues confirm identity threat). Specifically, in the second scenario, if an individual-upon confirming that stereotype threat cues exist-has the ability and desire to overcome the threat, then a psychological intervention may lead to sustained and improved performance outcomes, while the absence of such 'desire or ability' to cope with such a threat would lead to poor performance and learning. Here, the 'psychological interventions' refer to situations where an individual adopts certain beliefs so that she/he can cope with negative perceptions and adverse situations. For example, Inzlicht and Shmader (2012) referred to studies to explain what 'psychological interventions' look like in real life situations. For example, in one study, teachers manipulated students' perceptions about test anxiety. They educated and motivated students on test anxiety and convinced them that, in fact, test anxiety leads to higher performance. The authors found that students who changed their perceptions about test anxiety (treatment group) found to perform better than students in the control group. Thus, the authors argued that a negative perception that can otherwise be detrimental to one's performance can be turned into an opportunity for better performance. In the case of female CEOs, such 'psychological interventions' can be in the form of activating their sense of self-worth and adopting masculinist behaviors when they face stereotype threats from others.

Although, historically, stereotype threat theory has been developed to understand the academic underperformance of females in math (Spencer et al., 1999) and academic underperformance of African-American students in test settings (Steele and Aronson, 1995),

several management scholars have since utilized this theory to explore whether negative stereotypes affect how women managers reach top roles, and once there, how they cope with the gender-stereotypic perceptions they encounter (Bergeron, Block, and Echtenkamp, 2006; Heilman, 2012; Hoyt and Murphy, 2016). For example, in their recent study, Hoyt and Murphy (2016), argued that when female leaders face stereotype threats, they tend to respond to such threats either by engaging in vulnerability or showing reactance. Similar to the arguments made by Inzlicht and Schmader (2012), they argue that while female leaders' 'vulnerability' reactions will be in the form of confirming the gender-based stereotypes, which ultimately leads to declines in performance outcomes, a 'reactance' attitude toward such a threat emerges from developing coping mechanisms such as distancing themselves from the stigmatized group.

In this dissertation, I explore whether and under what circumstances female CEOs differ from their male-counterparts in initiating strategic change, strategic conformity, and organizational innovation. Adapting Inzlicht and Schmader's (2012) model, I argue that female CEOs, upon assuming their position, can face scrutiny and biased perceptions toward their effectiveness (i.e., stereotype threat) and such implicit/explicit threats may lead them to either display 'counter-stereotype' attitude (Chisik, 2015; Stapel, and Koomen, 1998) or 'conducive-stereotype' attitudes. Specifically, engaging in counter-stereotype behavior may lead female CEOs to psychologically and behaviorally deviate from the prescribed stereotypes of how women should behave (social gender roles) and strategically maneuver the organization's social and political environment and ultimately initiate a strategic change (a phenomenon I term 'hawkish' behavior). On the other hand, conducive-stereotype behavior would lead female CEOs

to engage in strategic conformity ('dovish' behavior) as they will opt to confirm to gender-stereotypic, socially sanctioned behaviors that are expected of them.

How will female CEOs be perceived by mostly male-dominated TMTs and boards of directors if they do not conform to gender stereotypes that they are implicitly expected to demonstrate? Expectancy-violation theory (Jussim, Coleman, and Lerch, 1987; Burgoon, 1985; Bettencourt, Dill, Greathouse, Charlton, and Mulholland, 1997) argues that we tend to evaluate other people more severely when their behaviors violate stereotyped expectations for their salient in-groups (e.g., women, minorities etc.). This argument has received empirical support from a wealth of studies (e.g., Jussim et al., 1987; Jackson, Sullivan, and Hodge, 1993; Branscombe, Wann, Noel, and Coleman, 1993; Jussim, Fleming, Coleman, and Kohberger, 1996). According to this theory, when a person behaves in a way that violates the stereotyped expectations, perceptions and evaluations of other people become more complex and varied based on the in-group and out-group status. More specifically, individuals who demonstrate more positive characteristics than expected are evaluated even more favorably than people with similar characteristics who are usually rated favorably all along. For example, Jussim et al. (1987) tested this prediction among Caucasian and black job applicants by manipulating the ethnicity and quality of the applicants. Jussim et al. (1987) employed two conditions for testing expectancy-violation theory, one depicting the black, upper-class subjects as job applicants, and the other involving Caucasian, lower-class persons with "broken English" as job applicants. While the first condition was employed to predict Caucasian judges' expectancies of stereotyped black subjects (out-group), the second was used to understand Caucasian judges' perceptions of expectancy violations of Caucasian subjects (in-group). Overall, their findings corroborated what

expectancy-violation theory would anticipate that both negatively and positively depicted black job applicants were evaluated (by Caucasian judges) more positively than similar Caucasian applicants. In another study, Taynor and Deaux (1973) found that study participants assigned greater rewards to a female subject depicted as helping in a civic emergency situation than to a male subject depicted in similar context. The authors argued that given the rescue attitude is perceived as masculine, evaluators were more impressed by a female's helpful behavior, regardless of the evaluators' gender or in-group membership.

In the context of corporate governance, expectancy violation theory may help us explain some instances of 'out-group' favoritism where an in-group member (e.g., male executive) positively evaluates the favorable out-group members' (e.g., female executives) behavior (Taynor and Deaux, 1973). In light of these arguments, I argue that female CEOs who respond to stereotype threat in a counteractive way and display 'favorable' behaviors (expected of a successful leader) may be perceived more positively by their male peers and supervisors. Such favorable perceptions may pave the way for female CEOs to rally necessary support to initiate aggressive strategic change and organizational innovation.

3.2 "Dovish" Posture: Do Female CEOs Engage in Strategic Conformity? Explanations from Socialization Theory

Socialization is a process through which newcomers are transformed from outsiders into engaged, effective members of an organization as organizational norms and roles are transmitted and reinterpreted from one occupant to another (Chatman, 1991; Schein, 1968; Van Maanen and Schein, 1977). Socialization theorists have argued that the group of people with which a new individual associates is the essential agency of socialization in an organization (Van Maanen, 1978; Brim, 1966). These agents play very crucial roles in shaping the newcomer's definition

and perceptions of the local situation (Louis, 1990), including the behaviors and norms that are sanctioned, valued, and desired in the new setting. For example, for a newly appointed CEO, the other executives of the TMT and board of directors are considered as the primary agents of socialization. Thus, the organizational socialization process helps individuals, including CEOs, gain organization-specific skills, perspectives, norms (written/unwritten) of behavior, ways of thinking, and values (Van Maanen and Schein, 1977). Given that CEOs are the top executives of the organization, the ramifications of their socialization may be more profound. For example, Fondas and Wiersema (1997) argued that there are three dimensional individual differences that affect firms' strategic outcomes. These are CEOs' prior work experience, educational background, and psychological characteristics. Although CEOs may be equipped with extensive prior experience, they may have to go through a socialization process when assuming a brand-new role that often involves a transition period (Weng and Lin, 2014). This position specific socialization is true to a certain extent for CEOs that were either promoted from within or hired from outside the firm. Such socialization may be in the form of both formal and informal interactions with subordinates, peers, and leaders within the firm (Van Maanen and Schein, 1977). Although both prior work experience and educational background vary extensively among CEOs, their effect on the socialization process and decision-making can be somewhat predictable and similar. However, I argue that the psychological characteristics of CEOs are not only unobservable, but they may also differ significantly based on the CEOs' gender and such differences may significantly affect the socialization process that both male and female CEOs go through.

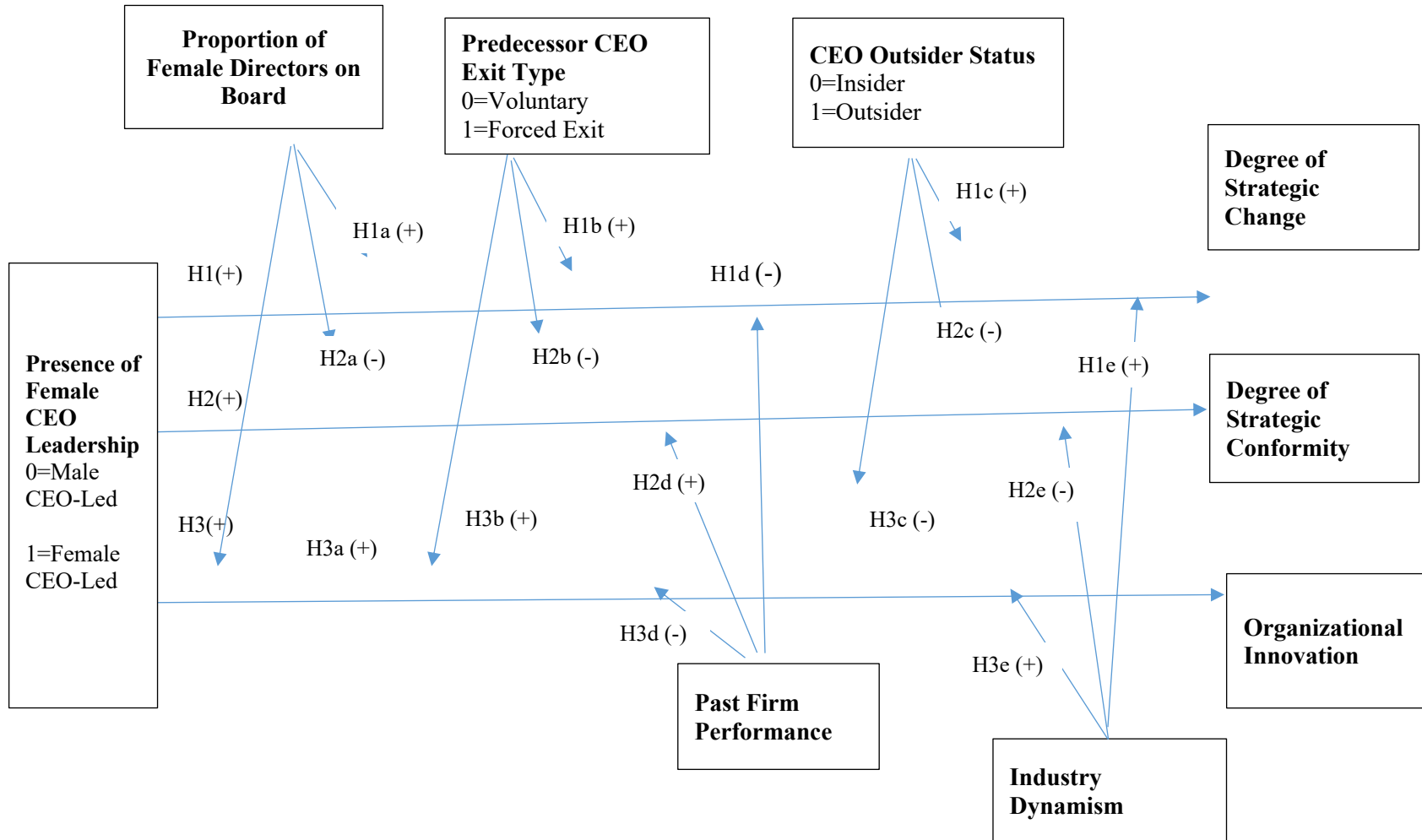
Hence, given the absence of a unified theory that explains whether and how the gender of corporate leaders affects their strategic choices (i.e., strategic change/strategic conformity), I explore the theoretical synergy among the socialization, stereotype threat, and expectancy violation theories in order to understand whether and under what circumstances female CEOs differ from their male-counterparts in initiating strategic change (or strategic conformity) following their appointments.

3.3 Dissertation Research Model

The research model for this dissertation is presented in Figure 3 below. In the first baseline hypotheses (H1), I explore whether female CEOs, compared to their male counterparts, engage in more strategic change following their appointment, and this relationship is influenced by several contingency factors. In the second baseline hypotheses (H2), I propose that female CEO leadership is positively related to strategic conformity and this relationship is moderated by several contingency variables. Here, it is important to note that, H1 and H2 are alternative hypotheses. While H1 (strategic change) is theoretically supported by the counter-stereotypic behavior of female CEOs where they confirm the presence of stereotypes and choose to react to them through ‘psychological interventions’ (Inzlicht and Shmader, 2012), H2 (strategic conformity) is theoretically supported by conducive-stereotype behavior where female CEOs confirm the presence of stereotypes but choose to conform to the stereotypes. Finally, in the third baseline hypotheses (H3), I examine the influence female CEOs have on several dimensions of organizational innovation (new product introductions and R&D development). Similarly, I also examine whether female CEOs’ effect on firm innovation is moderated by several contingency factors (firm performance, industry dynamism and proportion of female directors). I discuss the

theoretical underpinnings of this research model in more detail in the theory and hypotheses development section.

Figure 4: Dissertation Research Model



3.4 “Hawkish” Posture: Female CEO Leadership and Strategic Change

Given that firm strategic choices bear important consequences for firm’s financial performance, it is critical to understand the role corporate leaders play in initiating strategic change. In this dissertation, I argue that female CEOs, compared to their male counterparts, undertake more strategic change early in their tenure.

Hambrick and Fukutomi (1991) argue that, in discussing the five ‘seasons’ of CEO tenure, CEOs generally tend to dedicate their attention and energies to complying with the implicit ‘mandate’ he/she has been bestowed by the predecessor CEO or the board of directors. This ‘mandate’ is described as a rather implicit directive to the new CEO concerning the direction and pace of the firm’s strategies, and it can be either in the form of a deviance from or a conformity to existing firm strategies. One may simply argue that given all CEOs are well-trained and highly experienced leaders, regardless of their gender, they would all strive to do what is best for the company and its salient stakeholders. Indeed, a CEO (upon succession) normally undergoes a socialization process within the company, develops a good grasp of the company’s core strategies and operations, carefully interprets the company’s external environment, and ultimately decides whether or not he/she wants to initiate strategic change. However, I argue that this process may unfold in a more complex manner for female CEOs compared to their male counterparts. Accordingly, I take the view that ‘not all CEOs are created equal’ and female CEOs may experience uniquely challenging socio-political dynamics involving their perceived competence and fitness to serve as top leaders (Cook and Glass, 2014). In fact, women leaders are considered ‘occupational minorities’ under the prescriptions of the “glass cliff” theory (Ryan and Haslam, 2007). Proponents of this theory suggest that

occupational minorities (i.e., women and ethnic minorities) are more likely to be appointed to top roles in organizations that are “struggling, in crisis, or at risk to fail” (Cook and Glass, 2014, p.1081). Indeed, from securing well-paid rank-and-file jobs in male dominated work settings, to earning promotion to managerial roles, and ultimately to reaching the CEO role, most females (compared to males) have to endure many gender stereotypic perceptions that hamper their career advancement (Morrison et al., 1987). For example, prior work by Schein (1973) on the stereotypes of managers (both women and men) showed that while 60 descriptive terms (out of 92) were associated by both managers and men (e.g., aggressive, objective, and forceful), only eight descriptive terms (e.g., understanding, helpful, aware of the feelings of others, intuitive) were linked to managers and women. This reliable link between male attributes and managerial characteristics (of successful companies) led Schein to coin the term “think manager-think-male”. Thus, given the perceived lack of fit between females and managerial characteristics (e.g., Heilman, 1983; Kent and Moss, 1994), female managers, compared to men, tend to face harsher evaluation of their potential for leadership roles and undervaluation of the actual behavior as female leaders (McDonald et al., 2018; Eagly and Karau, 2002). Relatedly, Eagly et al. (1992) found that female leaders are evaluated less favorably than their male counterparts even when other behavioral differences are controlled for. Thus, being aware of such gender identity related biases (Steele et al., 2002), I argue that female CEOs not only accept the stereotype threat but also respond to it with a counter-stereotypical attitude. As aforementioned, if an individual- a female CEO in this case- based on the evaluation of the existing stereotype threat, has the ability and desire to overcome the threat, then a ‘psychological intervention’ may lead to sustained and improved performance outcomes. Female CEOs’ counter-stereotypical attitude (Chisik, 2015;

Stapel, and Koomen, 1998) may reveal itself through an engagement in stereotypically masculine behavior (either proactively or reluctantly) so that they are perceived as 'successful' leaders and fit into the 'think-manager-think-male' stereotype. Further, it is important to note that because of the implicit 'mandate to conform' norm forced by socialization agents concerning the firm's strategies, female CEOs will face the dilemma of either 'confirming' to or 'deviating' from the current strategies. Given that socialization agents (i.e., TMT members and directors appointed by the predecessor CEO) expect female CEOs to show conformist behavior - as they are often perceived as token leaders- and follow the 'footsteps' of the predecessor CEO, it is critical for female CEOs to prove themselves as 'independent' leaders and act on their own experience, knowledge, and strategic decision-making preferences. One way to show that is to deviate from the existing firm strategies in an attempt to prove themselves as effective change agents.

Although it is also plausible that female CEOs may have natural dispositions for being assertive, decisive, and competitive, they are often expected to demonstrate opposite attributes that conform to the socially prescribed gender roles. So, what would the process be like when female CEOs adopt a counter-stereotypical attitude by initiating strategic change?

Female CEOs may be receptive to the organizational values, norms, and perspectives as part of their socialization into the company's internal dynamics all the while exercising independence and creativity in their new roles (Nicholson and West, 1989; Van Maanen and Schein, 1977). If a female CEO's response to socialization forces is in the form of a resistance to existing strategies, then she is unlikely to continue with the same strategic direction of the predecessor CEO. Hence, she is more likely to explore alternatives to the status quo and initiate strategic change (Fondas and Wiersema, 1997). Indeed, such bold steps by female CEOs may be

inconsistent with socially prescribed gender stereotypes and may face a backlash from both internal and external stakeholders. In fact, expectancy-violation theory (Jussim et al. 1987) suggests that people tend to apply more extreme evaluations to other individuals- either in a positive or negative way- when their attitudes violate stereotyped expectations for their salient in-groups (e.g., women, minorities etc.). For example, past research has shown that greater awards were assigned to female participants when they demonstrate a masculinist behavior in a civic emergency event compared to male subjects' involvement in a similar situation (Lanaj & Hollenbeck, 2015; Taynor and Deaux, 1973). In the case of a female CEO, who is most likely to be appointed to a precarious leadership role (Cook and Glass, 2014), I contend that they would be more favorably evaluated than their male counterparts and encouraged when they violate socially sanctioned expectations and attempt to engage in aggressive strategies such as strategic change and organizational innovation.

Moreover, positive evaluations from peers and supervisors will help female CEOs gain the necessary support to initiate strategic change. In fact, scholars have shown that heightened social status may help token women develop positive expectations about interactions with male-dominated work groups (McDonald, Toussaint, and Schweiger, 2004). Thus, holding a high-status CEO position and having a positive interaction with a male-dominated TMT and board of directors is especially critical as it may help the female CEO to build a coalition for strategic change. For example, Rajagopalan and Spreitzer (1997, p.57-58) have argued that “the opportunities and constraints posed by organizational conditions can also be shaped by managers through tactics aimed at managing coalitions and minimizing political exposure” and suggested that this tactic can lead the CEO to create resistance to or need for strategic change. Thus, I argue

that female CEOs will adapt their psychological and cognitive orientation (Ely, 1995; McDonald, Toussaint, and Schweiger, 2004) by displaying stereotypically masculine attitudes (i.e., think-manager-think-male phenomenon) and seek to form supportive coalitions for creating the need for strategic change. Further, given that female CEOs, unlike their male counterparts, are often appointed to precarious and risky leadership positions, held to higher standards, and face stereotype threat, they have to be twice as vigilant in their decision-making. Consistent with this argument, research shows that the more women face stereotype threat, the more they show agentic and masculinist behavior and outperform their male counterparts in masculine stereotyped managerial roles (Bergeron, Block, and Echtenkamp, 2006). Finally, I believe that the significance of this proposed relationship rests on the premise that stereotype threat and female CEOs' response to such a threat (expectancy violation) may lead them to engage in more strategic change compared to their male counterparts. Thus, based on the above arguments, I propose the following hypothesis:

H1: Female CEOs, compared to their male counterparts, engage in more strategic change.

3.5 “Dovish” Posture: Female CEO Leadership and Strategic Conformity

Although I have argued above that female CEOs, compared to their male counterparts, will engage in more strategic change in the post-succession stage, alternatively I also recognize that it is possible for female CEOs to display conformist attitudes toward implementing strategies that align with industry norms. Given that the literature does not provide a unifying theory for explaining female CEOs' general tendencies toward firm strategic choices and the empirical findings in understating this link is quite fragmented and inconclusive, I seek to

explore whether and under what conditions female CEOs, compared to their male counterparts, engage in greater strategic conformity in the post-succession stage.

Strategic conformity is defined as “the degree to which the firm's business strategy profile adheres to central tendencies of the industry” Geletkanycz and Hambrick, 1997, p.666). This definition of strategic conformity is related to the concept of isomorphism used by institutional theorists (Deephouse, 1999; DiMaggio and Powell, 1983). Relatedly, institutional theory suggests that a strategy becomes legitimated if institutional agents deem it as acceptable and organizations whose strategies mismatch with such acceptable strategic behaviors are subjected to challenges and penalties such as denial of access to critical resources (e.g., capital, talents, networks etc.) and loss of legitimacy. Further, the loss of legitimacy due to non-conformist behavior can have detrimental performance consequences for firms as the current/prospective stakeholders who view the firm’s strategies as deviant from established industry norms may withdraw their support and resources or demand restrictive terms and require risk premiums to compensate for the uncertainty in their transactions with the firm (Miller and Bromiley 1990). Strategic management scholars have shown that CEO characteristics and traits affect strategic conformity (Finkelstein and Hambrick, 1990; Geletkanycz and Hambrick, 1997; Westphal and Bednar, 2005; Hiller and Hambrick, 2005; Delgado-García and De La Fuente-Sabaté, 2010). For example, Hiller and Hambrick (2005) have suggested that the greater the CEOs’ core self-evaluation the more their firms will show deviant behavior in their strategic directions and performance with respect to industry tendencies.

Further, Westphal and Bednar (2005) argue that conformity to existing firm strategies in times of poor performance can stem from cognitive biases and “perceptual distortions” in firm

leaders' decision-making (Starbuck, Greve, and Hedberg, 1978, p. 113; Barker and Duhaime, 1997). As firms' top decision-makers, CEOs may carry such cognitive biases resulting from several factors such as being socialized into the idea that current strategy is feasible and effective as well as previously taking part in (or endorsing) the formulation of the strategy (Tripsas and Gavetti, 2000; Milliken and Lant, 1991). This dissertation extends these factors to include a CEO's gender as an enabler of firm strategic conformity. I argue that all these factors and consequent cognitive biases (Barker and Duhaime, 1997) may be the result of the socialization process newly appointed CEOs go through during their post-succession stage. Although one may argue that the socialization of a CEO into her/his new role may be somewhat similar regardless of one's gender, I argue quite the contrary. Specifically, upon succession, while female CEOs have to strategically manage socialization agents who are likely to view them through the lenses of gender stereotypes and/or token status, male CEOs do not have to endure such gender related pre-conceptions (Wingfield, 2009; Williams, 1992) and subsequent scrutiny. Because the socialization process for female CEOs, compared to their male counterparts, is likely to be influenced by gender stereotype threat, their subsequent response to such a threat may result in different strategic choices. Thus, to understand the process that leads to firm strategic conformity, it is imperative to examine the factors propelling female CEOs to adopt a conducive-stereotypical attitude (i.e., behave in a way that reinforces the stereotype) toward firm strategies that align with industry tendencies. I argue that there are two important factors that lead a female CEO to adopting a conducive-stereotypical threat attitude: (1) lack of support from male-dominated socialization agents, as well as (2) perception of being negatively stereotyped.

First, a wealth of related research has shown that females are not only appointed to high-risk leadership positions, but also, they lack support and authority to achieve their strategic goals once they do get appointed (Cook and Glass, 2014; Glass and Cook, 2016; Ryan and Haslam, 2005; Ryan and Haslam, 2007). Thus, female CEOs, during their post-succession stage, may sense or overtly face resentment from the socialization agents (e.g., TMT members and the board of directors) and become more willing to commit to the existing strategies that these agents have once fervently formulated. For example, McDonald et al. (2018) have examined Caucasian male executives' behavioral responses to the appointment of a female (and a racial minority) CEO at their firm and sought to understand whether such appointments influence male executives' willingness to help their fellow executives. McDonald et al., (2018, p. 9) have argued that Caucasian male executives tend to have negative, stereotypic biases about the leadership capabilities of female (and racial minority) CEOs and as a result of such biases they "hold less favorable views of the overarching strategy that a new minority-status CEO is pursuing". In fact, findings of the study corroborate their arguments that Caucasian male top executives tend to experience a decreased sense of organizational identification, and as a result provide less help to colleagues, especially minority-status colleagues. Consistent with this view, it is possible that female CEOs, compared to their male counterparts, will be more inclined to conform to the current strategy during their post-succession tenure due to 'fear of failure' or fear of losing the confidence and support of the socialization agents. Moreover, Morrison, White, and Van Velsor 's (1987) book provides very insightful anecdotal evidence from female CEOs and other senior level executives supporting this argument:

"I feel that if I fail, it will be a long time before they hire other women for the job. Carrying that burden can lead women to play safe, to be ultraconservative, to opt out if a situation [that] looks chancy" (Female executive)

"Women are a minority in this business. A woman coming into a high-level meeting will see few other women. They have difficulty finding a supportive ear or shoulder. So, they feel distinctly different" (Female executive)

Second, the perception of being negatively stereotyped may lead stigmatized individuals (e.g., female CEOs) to divert their mental resources to dealing with such stressors rather than focusing on their aspirations and performance in various domains (Steele and Aronson, 1995; Spencer, Steele, and Quinn, 1999; Steele, Spencer, and Aronson, 2002; Davies, Spencer, Quinn, and Gerhardstein, 2002). Also, their level of awareness of and vulnerability to stereotype threat may lead female CEOs to direct more of their efforts to rectifying the potential consequences of such threats. Given that the psychological and socialization process for female CEOs is exacerbated due to gender stereotype threat, I argue that female CEOs, compared to their male counterparts, engage in more strategic conformity in the post succession stage. Thus, based on the above arguments, I propose the following hypothesis:

H2: Female CEOs, compared to their male counterparts, engage in more strategic conformity.

3.5.1 The Proportion of Female Directors on Board as a Moderator

Although several scholars, drawing from team diversity, associate female directors with less strategic change (Triana, Miller, and Trzebiatowski, 2013), I argue that there is much to be explored. Specifically, although I do not refute the idea that female director representation

creates a distinct decision-making dynamic for corporate boards, there is a missing link that may explain the strategic change process with the presence of female CEOs and greater female director representation. I address this missing link by answering three questions: (1) do women directors positively affect the socialization process a female CEO goes through in her early tenure? and (2) do they support the female CEO's efforts in initiating strategic change? First, past research has shown that female director representation on corporate boards increases the likelihood of female CEO appointments (Gupta and Raman, 2014; Elsaid and Ursel, 2011), lending support to the idea that female leaders tend to generate a critical mass to increase their effectiveness in board deliberations. Further, research suggests that the increased female director presence on corporate boards helps women directors (including female CEOs as they also serve as directors) engage in greater information sharing, a decreased level of self-censorship, and a heightened level of influence within the board (Elstad and Ladegard, 2012). Similarly, several scholars (e.g., Kramer, Konrad, Erkut, and Hooper, 2006; Konrad, Kramer, and Erkut, 2008) have shown, through extensive interviews, that women directors (and CEOs) tend to include each other to avoid being isolated while acting as a 'sounding board' for one another during board deliberations. In line with these insights, research shows that female CEOs may feel more empowered and validated when there is more female director representation on the board (Konrad, Kramer, and Erkut, 2008). Second and relatedly, the socialization process for female CEOs will be more comfortable and conducive with the presence of more female directors. In support of this argument, the research has shown that women will exchange and integrate more information, engage in more informal social interaction (Elstad and Ladegard, 2012), and improve the quality of strategic decisions and firm value (Carpender and Fredrickson, 2001;

Joshi and Roh, 2009; van Knippenberg, De Dreu, and Homan, 2004) when the ratio of women director representation increases. In fact, women directors are seen by their male counterparts as leaders asking the tough questions, raising the much-avoided issues while making sure that the issues that are being discussed are thoroughly understood by board members (Konrad, Kramer, and Erkut, 2008). Such social interactions with board members are very important for female CEOs as one of the first steps in the organizational socialization process is the informal and formal information sharing among the members of the social group (Van Maanen and Schein, 1977).

Finally, I argue that female CEOs will engage in more strategic change when there is a higher proportion of female directors on the board, as women directors will pave the way and serve as a “staging ground” for female CEOs’ strategic initiatives by easing the socialization process in their early tenure (Morrison, White and Van Velsor, 1987; Kramer, Konrad, Erkut, and Hooper, 2006; Torchia et al., 2011). Building on the ‘counter-stereotype threat’ hypothesis, I argue that there will be a two-way synergy between women directors and female CEOs where both sides will be eager to prove themselves valuable and effective by clearing the ‘threat in the air’. Thus, when women directors see a female CEO acting more as a ‘change agent’ than a conformant, and make risk-laden decisions, women directors may also support her strategic choices such as initiating a strategic change. Based on the above arguments, I propose the following hypotheses:

H1a: The proportion of female directors on the board positively moderates the relationship between presence of female CEOs and the level of strategic change such that female

CEO-led firms engage in more strategic change when there is a higher proportion of female directors on the board.

Do female CEOs show more (or less) conformist behavior in their strategic choices when there are more female directors on their boards? I argue that female CEOs will be less willing to conform to current firm strategies (that are consistent with industry tendencies) when there are more female directors on their boards. The rationale for this assertion is that (1) a higher proportion of female directors may create a psychologically safe environment for female CEOs (Edmondson, 1999), and (2) such a psychologically safe environment will encourage female CEOs to activate their counter-stereotype attitude via creative and aggressive strategic decision making and nonconformist behavior. In fact, research suggests that psychological safety influences how individuals perceive the consequences of taking interpersonal risks in work settings (Edmondson and Lei, 2014). Also, it has been argued that psychological safety can alleviate the communication barriers-mostly arising when people have differing and even conflicting opinions- and may create an environment in which people feel liberated to express their opinions (Edmondson and Roloff, 2009).

First, female role models such as other women holding powerful positions can play crucial roles in reassuring women in the face of identity threats in leadership roles. Such role models may prove to be effective in fostering women's success in a mainly male-stereotyped domain. Such success stories may increase a sense of solidarity while decreasing the harmful effects of identity threats among other women (Marx and Roman, 2002; McGlone, Aronson, and Kobrynowicz, 2006; Dasgupta, 2011). For example, Beaman, Duflo, Pande, and Topalova (2012), in their randomized natural experiment (an observational study that is performed to

evaluate the consequences of policy interventions), showed how female role models increase other women's aspirations. By using the gender quota law on village councils as their experiment setting, they found that heightened representation of females on councils led to greater career and educational goals for local girls and eradicated the gender gap in educational achievement.

Although women role models may have the potential to lead some women to feel self-deflated and under-achieved² (Rudman and Phelan, 2010; Parks-Stamm, Heilman, and Hearn, 2008), there is strong evidence that they also instill inspiration, hope, and motivation for other women (McIntyre, Paulson, and Lord, 2003; Simon and Hoyt, 2013; Good, Woodzicka, and Wingfield, 2010). For example, research has found that counter-stereotypical portrayals of females in media outlets was influential in buffering women from identity threat effects in leadership contexts (Simon and Hoyt, 2013). Further, research has shown that women with high levels of leadership efficacy were more positively affected by elite women role models when they are appointed to precarious leadership situations, and they also tend to show greater levels of leadership aspiration, higher performance and leader self-identification in such situations (Hoyt, 2013).

Following these findings, I argue that female directors serving on a corporate board can be seen as strong role models for female CEOs (as peers) and inspire and encourage them to pursue their ideas by creating a safer environment.

Second, Erkut, Kramer and Konrad (2008) have explored how the level of female director representation helps women directors cope with the consequences of gender stereotype threat. Specifically, Erkut and colleagues (2008) demonstrated how a critical mass of three or more women directors on corporate boards help normalize the presence of women, where gender

² Exposure to elite female leaders had self-deflating effects on women's leadership aspirations and self-perceptions following a leadership task, similar exposure to less elite female role models with whom the women could identify, did not have this negative impact (Hoyt and Simon, 2011)

is not an impediment for effective communication and women directors (including female CEOs) tend to feel more comfortable, heard, and supported. Taken together, I argue that these conditions will discourage female CEOs from pursuing strategic conformity. Thus, based on the above arguments, I propose the following hypothesis:

H2a: The proportion of female directors on boards negatively moderates the relationship between female CEO presence and the level of strategic conformity such that female CEOs will be less (more) willing to pursue strategic conformity when there is a higher (lower) proportion of female directors on the board.

3.5.2 Predecessor CEO Exit as a Moderating Variable

Another important contingency factor that influences the female CEO-strategic change relationship is the nature of predecessor CEO exit. I argue that female CEOs engage in more strategic change when the predecessor CEO exit was involuntary rather than a voluntary departure. CEO exits, in which a CEO voluntarily or involuntarily leaves the C-suite, can be disrupting to organizations (Grusky, 1963; Zhang, 2006). CEO dismissals, in particular, do not frequently occur unless the strategies and/or actions of a CEO result in undesirable consequences for the focal firm. For example, low firm performance has been consistently shown to be among the major reasons for CEO dismissal (Fredrickson, Hambrick, and Baumrin, 1988; Finkelstein and Hambrick, 1996; Lausten, 2002; Jenter and Kanaan, 2015). Further, resource dependence theory proponents argue that CEO dismissals arising from poor firm performance create opportunities for the successor CEO to strategically align the firm's capabilities and resources to changes in its environment (Pfeffer and Salancik, 1978; Friedman and Singh, 1989; Goodstein and Boeker, 1991). Thus, executive succession allows firms to have periodic opportunities to

depart from their entrenched cultures and strategies (Fondas and Wiersema, 1997; Pfeffer and Salancik, 1978). In fact, research has shown that CEO turnover increases the likelihood of strategic change (Miller, 1993; Gabarro, 1987). For example, Quigley and Hambrick (2012) have argued that two interrelated factors including the current leader's commitment to existing strategies and pressure for a new successor to demonstrate his/her effectiveness in various forms, leads to higher likelihood of strategic change.

It is reasonable to expect that every newly hired CEO, regardless of gender, aspires to prove his/her worthiness and value as a leader by initiating strategic change (Pfeffer, 1992; Ocasio, 1994; Ocasio and Kim, 1999; Westphal and Bednar, 2005). However, given that newly appointed female CEOs tend to face harsher scrutiny (Torchia, Calabro, and Huse, 2011; Konrad, Kramer, and Erkut, 2008; Elstad and Ladegard, 2012), negative reactions (Lee and James, 2007), and in some cases an undervaluation of their capabilities (McDonald et al., 2018), they may have to work harder to counteract the stereotype threats they are likely to face. Thus, I contend that a predecessor CEO's dismissal as opposed to voluntary departure creates a favorable context for female CEOs to combat the gender-specific stereotype threat, gather support and initiate strategic change.

More specifically, a female CEO's coping mechanisms with stereotype threat will be enhanced by the opportunity to succeed a less effective predecessor CEO. For example, under such circumstances, female CEOs will intentionally and strategically adopt a 'counter-stereotype threat' attitude as opposed to a 'conductive-stereotype' attitude as they may perceive that they have the upper hand and the necessary discretion to generate coalitions and persuade important stakeholders toward a change in strategic direction. Specifically, a corporate board's decision to

appoint a female CEO (most likely after a male CEO) upon a CEO's dismissal may signal to her that she will be treated less negatively, or seen in a 'gender stereotype' light, but instead will be given the support she needs during and after the transition to the role. Accordingly, such sense of 'identity safety' (Davies, Spencer, and Steele, 2005) may encourage newly appointed female CEOs to take bolder actions in the form of a strategic change. Based on the above arguments, I propose the following hypothesis:

H1b: Predecessor CEO exit (voluntary vs. dismissal departure) positively moderates the relationship between the presence of female CEOs and the level of strategic change such that female CEO-led firms engage in more strategic change when the predecessor CEO is dismissed.

Similarly, I argue that female CEOs engage in less strategic conformity when the predecessor CEO is dismissed (instead of voluntarily departs from the firm). Corporate governance scholars argue that the nature of the predecessor CEO departure has proven to be a critical succession context (Karaevli and Zajac; 2013; Zhang, 2008; Shen and Cannella, 2002b). Specifically, while some successions are long-planned voluntary events, commonly resulting from factors such as health issues, retirements, or career changes, other forms of succession include sudden CEO exits, mainly resulting from the board's dismissal of CEOs due to breach of employment contract or poor firm performance. Following dismissal cases, boards of directors engage in a search for a new CEO that has the capability, knowledge, experience, and characteristics to transform the company into a successful leader in its industry. Indeed, new CEOs are well aware of the pressure of being appointed to 'clean up the acts' of the predecessor CEO when the predecessor CEO is dismissed. Some research evidence suggests that executive job demands under normal circumstances can be dramatically different from what is needed in

crisis contexts (Haslam, Platow, Turner, Reynolds, McGarty, Oakes, Johnson, Ryan, and Veenstra, 2001; Meindl, 1993; Hunt, Boal, and Dodge, 1999). Regardless of the magnitude or the type of the crisis (e.g., poor performance), one issue remains to be addressed: whether the firm will recover from the current situation and initiate a change that signals to salient stakeholders that the firm will have better prospects in the future. Although some scholars argue that the dismissal of the predecessor CEO can negatively affect the new CEO succession process and consequences (Zhang, 2008) as the selection process might be conducted in a hasty manner (Shen, 2003; Wiersema, 2002), I contend that not all CEO dismissals occur with urgency, unless it involves corporate misconduct issues (e.g., sexual harassment, fraud etc.). Thus, the board of directors might plan the succession process (dismissal and finding an adequate replacement) long before it is made public (Biggs, 2004).

Given the scope of this dissertation, I argue that newly appointed female CEOs are more likely to deviate from industry tendencies when appointed after the predecessor CEO's dismissal. First, some scholars suggest that executive successions alone are not enough to launch a dramatic strategic deviance from the industry norms, unless the successor CEO possesses different values and interests embedded in their demographic characteristics (Yokota and Mitsuhashi, 2008). Yokota and Mitsuhashi (2008) suggested that the size, tenure, and educational and functional background of the TMT members (including CEOs) could affect the strategic direction of a firm. However, the demographic trait that was missing in their study was the gender composition of the TMT and the CEO, one that has been shown to have major consequences for organizational outcomes and strategies (Cook and Glass, 2014). I argue that the nature of the predecessor CEO exit may affect a new female CEO's tendency to engage in strategic deviance from industry

norms. Thus, I suggest that such a tendency mainly stems from the pressure female CEOs face both from their socialization agents and their own perceptions that they need to prove themselves as different and creative change agents within the industry. Thus, based on the above arguments, I propose the following hypothesis:

H2b: Predecessor CEO exit (voluntary vs. dismissal departure.) negatively moderates the relationship between female CEO presence and the level of strategic conformity such that female CEOs engage in less (more) strategic conformity when the predecessor CEO departure was forced (voluntary) in nature.

3.5.3 CEO Outsider Status as a Moderating Variable

Another contingency that may affect female CEOs' ability to initiate strategic change is CEO outsider status. I propose that outsider female CEOs engage in more strategic change at the early stage of their tenure. The scholarly debate on the CEO outsidership- strategic change relationship continues (Karaevli and Zajac, 2013; Zhang and Rajagopalan, 2010; Bailey and Helfat, 2003; Boeker, 1997), while some scholars suggest that outside CEOs tend to take risks and seek urgent strategic changes, others challenge this notion and contend their change efforts are hindered by various factors. Thus, the question of whether outsider status influences a female CEO's willingness to pursue a strategic change remains unanswered. In this dissertation, I argue that outsider female CEOs' socialization process in organizations affects their response to gender stereotype threat and ultimately makes them more likely to initiate strategic change.

Several scholars suggest that newly appointed outsider CEOs will be less committed to the status quo and be less cognitively rigid (open-minded) and able to pursue alternative firm strategies (Bailey and Helfat, 2003; Hambrick and Finkelstein, 1987, p. 84). Specifically, given

that outsider CEOs are less likely to develop close social ties to insider executives and directors, and as a result, have less commitment to the current strategic direction, they are assumed to be predisposed to significant and potentially disruptive strategic changes (Zhang and Rajagopalan, 2010; Hambrick, Geletkanycz, and Fredrickson, 1993).

Similarly, research has shown that boards of directors hire outside CEOs when they expect change in the firm's strategic direction-mainly due to poor firm performance (Hilger, Mankel and Richter, 2013; Zhang and Rajagopalan, 2010; Cannella and Lubatkin, 1993; Wiersema, 1992; Helmich and Brown, 1972; Grusky, 1963). For example, Wiersema (1992) has shown that firms have a greater likelihood of experiencing changes in their diversification strategy when they have an outsider succession rather than an insider succession. Also, several other scholars have found that insider succession is associated with conformity to existing policies and practices, while outsider CEOs succession is shown to create greater change in organizational structure and staffing (Helmich and Brown, 1972; Grusky, 1963). Thus, it is plausible to anticipate that when a board of directors opts for an outsider female CEO, they expect her to initiate strategic change in hopes of a performance turnaround (Kesner and Sebor, 1994). However, for an outside female CEO to pursue her paradigm shift, she needs to first successfully go through the socialization process (Van Maanen and Schein, 1977) and rally the support of key internal and external stakeholders (Rajagopalan and Spreitzer, 1997).

A few factors may help outside female CEOs obtain the necessary support to initiate strategic change. First, because the board of directors and TMT members are not fully informed on the outsider female CEOs competencies and behavioral tendencies (e.g., risk-taking) (Shen and Cannella, 2002; Zajac, 1990), they will have to give her the "benefit of a doubt" and allow

her to make more independent and bold decisions. Second, by virtue of being appointed as an outsider, female CEOs are expected to have broader knowledge of environmental conditions, bring a unique portfolio of resources, and set of skills (Zhang and Rajagopalan, 2003; Harris and Helfat, 1997) to improve firm performance through strategic change. Accordingly, considering the gender stereotype threat female CEOs are likely to face (Glass and Cook, 2016; Cook and Glass, 2014; Ryan and Haslam, 2005; Ryan and Haslam, 2007), I argue that they will view strategic change as an opportunity to showcase their leadership's effectiveness rather than conforming to the status quo and potentially confirming the commonly held belief that women are less risk-averse (Huang and Kisgen, 2013; Khan and Vieito, 2013; Levi et al., 2014; Atkinson, Stanley, Baird, and Frye, 2003; Perryman, Fernando and Tripathy, 2016; Faccio, Marchica and Mura, 2016). Based on the above arguments, I propose the following hypothesis:

H1c: CEO outsider status positively moderates the relationship between the presence of female CEOs and the level of strategic change such that firms led by outsider female CEOs engage in more strategic change.

Another important organizational contingency that affects the link between the presence of female CEOs and strategic conformity is the origin of a CEO (i.e., insider versus outsider status). In this dissertation, I argue that outsider female CEOs (with firm tenure of less than two years and industry tenure of at least two years) will be less willing to conform to the central tendencies of industry norms when deliberating firm strategies.

Research suggests that boards typically appoint an outsider CEO in an attempt to disrupt the pattern of organizational inertia, and the perceived ineffective strategies associated with the predecessor CEO's vision, experiences and characteristics (Karaevli and Zajac, 2013). Thus,

outsider CEO succession can be seen as a strong signal to the new female CEO that her ideas and decisions are likely to receive the support of stakeholders. In fact, the board's potential support for (or disapproval of) a newly appointed CEO has been examined as an important context in which board-CEO relationship dynamics can be explored (Shen, 2003; Boyd, Haynes, and Zona, 2011). Furthermore, it is important to note that the board's choice of an outsider CEO rather than an insider shows that the board has the necessary power and influence to steer the firm's strategies in a direction that is different from that the predecessor CEO pursued (Zajac and Westphal, 1996; Goodstein and Boeker, 1991) and that the socialization agents (directors and TMT members) expect a change in the firm's strategic direction following an outsider succession (Helmich and Brown, 1972; Friedman and Saul, 1991; Shimizu and Hitt, 2005). Accordingly, these circumstances invigorate outsider female CEOs' ability to look for alternatives and pursue strategic change. Based on these arguments, I suggest the following hypothesis:

H2c: CEO outsider status negatively moderates the relationship between female CEO presence and the level of strategic conformity such that outsider (insider) female CEOs engage in less (more) strategic conformity.

3.5.4 Past Firm Performance as a Moderating Variable

Although research has documented the importance of past firm performance as an organizational contingency that may influence the propensity to initiate strategic change (Quigley and Hambrick, 2012; Nakauchi and Wiersema, 2014), female CEOs' potential effect on strategic change following a firm's poor performance has been missing in the literature. Thus, to fill this void in the literature, I seek to examine how female CEOs respond to strategic change following poor firm performance. In this dissertation, I propose that the impact of female CEO

presence on the propensity for strategic change will be contingent upon past firm performance. Specifically, poor past performance will afford female CEOs the impetus and sense of urgency with which to engage in more strategic change. Research to date has shown that declining financial performance creates the need for strategic change (Nakauchi and Wiersema, 2014; Barker and Duhaime, 1997) and exacerbates the pressure stakeholders place on management to change the firm's current strategy (Weitzel and Jonsson, 1989; Huff, Huff, and Thomas, 1992; Pajunen, 2006). Several scholars suggest that one of the main reasons for poor firm performance is ineffective formulation and implementation of firm strategies where a firm fails to successfully adapt to its industry environment (Volberda, van der Weerdt, Verwaal, Stienstra, and Verdu, 2012; Cameron, Sutton and Whetten, 1988; Barker and Duhaime, 1997). Thus, poor firm performance may be the result of management's actions (or inactions) where managers either misinterpret their environment or fail to consider adopting to the changes in their industry (Tripsas and Gavetti, 2000). A large body of literature has examined the underlying reasons for executives' failure to initiate strategic change following a firm's poor performance (Nakauchi and Wiersema, 2014; Westphal and Bednar, 2005; Barker and Duhaime, 1997). Several studies have suggested that failing to initiate strategic change following poor firm performance, partly, stems from the decision-making process in which executives hold a range of cognitive biases or 'perceptual distortions' (Milliken and Lant, 1991; Barker and Duhaime, 1997). For example, Westphal and Bednar (2005) argue that such cognitive biases may be the results of several factors such as becoming comfortable with existing strategy, failure to admit that the strategy is obsolete, or being the formulator of the current strategy (Tripsas and Gavetti, 2000; Starbuck, Greve, and Hedberg, 1978). This is similar to Miller (1991)'s notion of executives being "stale in

the saddle”. In such firms, the decline in firm performance will continue until the firm undergoes strategic change by creating new skills, resources, assets (Barker and Duhaime, 1997), and CEO succession (Westphal and Fredrickson, 2001).

Female CEOs have been shown to possess different cognitive characteristics, risk-preferences, and decision-making processes compared to their male counterparts in various organizational contexts (Palvia, Vähämaa and Vähämaa, 2015). Perryman et al., 2016; Hoobler et al., 2018), I argue that, following poor firm performance, female CEOs may more easily rally support for strategic change and face less resistance from the status quo in their early tenure (Hambrick et al., 1993; Westphal and Bednar, 2005). Furthermore, poor past performance will create a favorable context in which female CEOs will be able to ease the ambivalence they are likely to experience in their early tenure and activate their counter-stereotypical behavior. Following poor firm performance, female CEOs may choose to change the current strategy, as opposed to conforming to it for the following reasons.

First, research on the ‘glass cliff’ phenomenon has repeatedly shown that female CEOs are appointed to precarious, risky leadership positions in poorly performing firms (Glass and Cook, 2016; Cook and Glass, 2014; Ryan and Haslam, 2005; Ryan and Haslam, 2007). Such female CEOs some argue are ‘set up’ to fail and then blamed for the failure and succeeded by a white male CEO (i.e., what is referred to as the ‘savior effect’). However, not all ‘glass cliff’ examples are negative like the ones Yahoo’s CEO Marissa Mayer or HP’s CEO Carly Fiorina went through. Since female CEOs sometimes inherit firms with built-in risks and crisis, they are more likely to face a “mandate to respond” (Hambrick and Fukutomi, 1991) attitude from the board of directors and will be more likely to engage in strategic change in their early tenure

(Hutzschenreuter, Kleindienst, and Greger, 2012; Bigley and Wiersema, 2002). For example, Xerox's board appointed Anne Mulcahy as CEO when the company was on the edge of a bankruptcy, but she successfully adopted several organizational changes and ultimately steadily increased the firm's profits (George and Mclean, 2005). She was then succeeded by Ursula Burns, the first African American female CEO of a Fortune 500 firm (McCullough, 2014). Also, PrimeWay Federal Credit Union's Annette Zimmerman successfully managed the firm's turnaround when it merged with a failed credit union (McCullough, 2014) and she argued (contrary to the "glass cliff" phenomenon) that the reason boards appoint females to lead firms through hard times is, in part, because "today's generation of workers – which includes more women – responds better to emotional excitement than it does to the traditionally masculine dictator-leadership style of previous generations".

Second, I argue that such a psychological and cognitive perspective towards risk may be shared by many female CEOs and they may see such precarious or risk-laden situations as opportunities to prove themselves effective and valuable. In fact, prospect theory proposes that while poor performance is associated with risk-seeking behavior, strong performance is associated with risk-aversion (Holmes, Bromiley, Devers, Holcomb, and McGuire, 2011; Kahneman & Tversky, 1979). Further, both past and recent research shows that women leaders, contrary to the widely accepted view, may not be risk-averse, and may even be more risk-tolerant than their male counterparts (Berger, Kick and Schaeck, 2014; Adams and Ragunathan, 2017; Mukarram, Ajma and Saeed, 2018). In addition, some studies have found that women leaders create value for shareholders through improved firm performance (Palvia, Vähämaa and Vähämaa, 2015; Hoobler et al., 2018; Post and Byron, 2015). For example, Palvia and colleagues

(2016), utilizing a large panel data set of U.S. banks, found that banks led by female CEOs and board chairs were less likely to have failed during the 2008-2009 financial crisis. Also, Hoobler et al.,'s (2018) meta-analysis has documented that female CEO presence is more likely to be positively linked to firms' financial performance, particularly in more gender egalitarian cultures. Based on the above arguments, I propose the following hypothesis:

H1d: Past firm performance negatively moderates the relationship between the presence of female CEOs and the level of strategic change such that female CEO-led firms will engage in less (more) strategic change following strong (poor) past performance.

Although the main hypothesis for my strategic conformity argument suggests that female CEOs, compared to their male counterparts, engage in more strategic conformity in the post-succession stage, this relationship may be contingent upon the focal firm's past performance. As aforementioned, scholars have suggested that deteriorating firm performance creates the need for strategic change (Nakauchi and Wiersema, 2014; Barker and Duhaime, 1997). However, scholars have shown that failing to engage in strategic change despite declining firm performance is the result of a decision-making process in which top executives have a range of cognitive biases or 'perceptual distortions' (Milliken and Lant, 1991; Barker and Duhaime, 1997). Thus, because the formulation of firm strategic change is a collective effort, it is essential for a firm's CEO to form a collaboration among socialization forces (e.g., TMT members) and rally support in implementing such change. Although female leaders tend to face harsher and less supportive socialization forces in general (McDonald et al., 2018; Eagly et al., 1992), I suggest in the face of past poor firm performance, newly appointed female CEOs may face less resistance from the status quo in their early tenure (Hambrick et al., 1993; Westphal and Bednar, 2005).

In addition, because female CEOs tend to have unique characteristics, risk-preferences, and decision-making processes compared to their male counterparts in various organizational contexts (Palvia et al., 2015; Perryman et al., 2016; Hoobler et al., 2018), I argue that in the wake of past poor firm performance, newly appointed female CEOs may feel emboldened to pursue less conformist behavior in an attempt to re-build stakeholder confidence and trust by re-positioning their firms with disruptive strategies. Thus, it is reasonable to expect poor past firm performance will provide female CEOs with the right context to gain confidence and support of socialization agents (directors and TMTs) to engage in less conformist strategies.

H2d: Past firm performance positively moderates the relationship between the presence of female CEOs and the level of strategic conformity such that female CEOs will engage in more (less) strategic conformity following good (poor) firm performance.

3.5.5 Industry Dynamism as a Moderating Variable

The role of the environment as a moderating variable in various organizational contexts is well established (Venkatraman, 1989; Prescott, 1986; Goll, Johnson, and Rasheed, 2007; Nadkarni and Narayanan, 2007). However, the literature has not yet explored whether and to what extent industry dynamism (as an important dimension of the task environment) affects female CEOs' attempts to engage in strategic change. Specifically, I propose that female CEO-led firms will engage in more strategic change at the early stage of their tenure in more dynamic industries. Several scholars argue that the high level of upheaval in a firm's industry and market conditions (i.e., dynamism) impacts the threats and opportunities a firm might face (Dess and Beard, 1984; Henderson, Miller, and Hambrick, 2006). Similarly, research suggests that the more dynamic an industry is, the more unstable and unpredictable it becomes, the greater the hyper-

competition among its firms, the more difficult it is for corporate leaders to pursue growth opportunities (Gavetti, Levinthal, and Rivkin, 2005; D'Aveni, 1994; Wiggins and Ruefli, 2005).

Research has shown that, in dynamic industries, the potential for early improvement is considerable as the predecessor CEO's paradigm is likely to be replaced by a successor CEO whose knowledge, expertise, and organizational perspectives are well aligned with current environmental conditions (Hambrick and Finkelstein, 1987; Henderson et al., 2006). However, CEOs operating in highly dynamic industries face one crucial challenge: maintaining a matching paradigm with the ever-changing external factors in such industries. In other words, industry dynamism can make the CEOs' current knowledge and expertise obsolete in a very short period of time (Miller and Shamsie, 2001). For example, Henderson et al. (2006), drawing from 228 CEOs in the highly dynamic computer industry, found that while CEOs were associated with high performance early in their tenure, firm performance steadily declined across their tenure as their initial paradigm became obsolete overtime. Although this finding provides invaluable insights, Henderson et al.'s (2006) study implicitly suggests that the learning, knowledge and expertise accumulation, and strategic decision-making process for CEOs (regardless of gender) in dynamic industries are similar and that they all become obsolete across their tenure. However, I contend that these processes (e.g., the pressure to continually maintain cutting-edge knowledge, adaptive learning), may be more intense for female CEOs, particularly in dynamic industries.

Regardless of the succession type, it is reasonable to consider the appointment of a new female CEO as a sign that the firm's board of directors (and/or shareholders) seek a change of CEO paradigm (Weng and Lin, 2014). Although female CEOs, similar to their male counterparts, may experience the threat of becoming outdated in the face of rapid shifts in

dynamic industries, their approach and response to such, and other changes may differ (Triana et al., 2013).). Specifically, I argue that female CEOs, because of harsher and less supportive socialization agents, will be more committed to knowledge accumulation and updating their knowledge with newer information as they cannot afford to be considered outdated female leaders. Thus, they will be more proactive and sensitive in interpreting the firms' external environment, and aggressively pursue market-based strategies (Hambrick and Finkelstein, 1987). Thus, I argue that female CEOs will leverage industry dynamism by arguing such dynamism requires them to initiate strategic change within their firms.

In addition, to the extent that changes in firm strategies reflect changes in strategy making behavior, it is possible that female CEOs will activate their counter-stereotypical ('hawkish' posture) behavior towards initiating strategic change in their early tenure. Here, it is important to note that because a female CEO's legitimacy as a strong and decisive leader is not fully established, dynamic industries can give them a valuable opportunity to showcase their leadership competencies. Based on the above arguments, I propose the following hypothesis:

H1e: Industry dynamism positively moderates the relationship between the presence of female CEOs and the level of strategic change such that female CEO-led firms will engage in more (less) strategic change in more (less) dynamic industries.

Industry dynamism refers to "rapid change that is hard to predict and that heightens uncertainty for key organizational members" (Dess and Beard, 1984, p. 56). Also, dynamic industries are characterized as complex, unpredictable, and heterogeneous, creating hyper-competition among firms, which makes it difficult for firm leaders to pursue growth opportunities (Gavetti, Levinthal, and Rivkin, 2005; D'Aveni, 1994; Wiggins and Ruefli, 2005).

In dynamic industries, firm leaders face the challenging task of predicting trends in technologies, customer groups, products, and the mix of competitors (Larrañeta, Zahra, Galan Gonz'alez, 2014). Thus, changes and disruptive innovations in these domains make it extremely difficult for CEOs to constantly gain knowledge and apply rival's successful 'strategic formula' (Wiggins and Ruefli, 2005; Dess and Beard, 1984) in order to achieve and sustain a competitive advantage. Further, research suggests that firms pursuing simplistic strategies (Ferrier and Lyon, 2004; Miller and Chen, 1995) and persisting with existing firm strategies for long periods of time (Ferrier and Lee, 2002) while operating in a highly dynamic industry tend to experience lower firm performance. It is, then, plausible to argue that industry dynamism creates forces that may reverse the gains a firm has achieved through current strategies. Thriving in dynamic industries, therefore, requires CEOs who stay attuned to ever-changing market forces by considering a range of strategies that can earn them competitive edges (D'Aveni, 1994).

Although research to date has examined the consequences of industry dynamism in various contexts, there has been no examination of how female CEOs respond to such industry instability. Thus, I propose that female CEOs will engage in lower levels of strategic conformity in more dynamic industries. The stakes are high for firms operating in dynamic industries as unpredictable changes significantly affect performance outcomes (Ferrier and Lee, 2002; Ferrier, 2001). Given that this reality is likely not lost on female CEOs, it is imperative for them to stay vigilant and gain a good grasp of the firms' external environment, while carefully evaluating the board's view on what the new strategic direction should be. Accordingly, industry dynamism may provide the right context for female CEOs to exhibit a more aggressive ('hawkish')

behavior in formulating strategies that are less conformist. Based on these arguments, I propose the following hypothesis:

H2e: Industry dynamism negatively moderates the relationship between female CEO presence and the level of strategic conformity such that female CEOs will engage in less (more) strategic conformity in more (less) dynamic industries.

3.6 “Hawkish” Posture: Female CEO Leadership and Organizational Innovation

Organizational innovation strategies involve the expansion of its product/service offerings and scope of operations (Damanpour, 1991). They are characterized by high levels of risk and probability of failure (Chen et al., 2016) and have important consequences for firm performance (Makri et al., 2006; Calantone et al., 2002). Because organizational innovation is essential to a firm, the scholarly literature has extensively examined the managerial antecedents of organizational innovation (Mao and Zhang, 2018; Galasso and Simcoe, 2011; Jung et al., 2008; Damanpour and Schneider, 2006; Barker, and Mueller, 2002). One important antecedent of organizational innovation several studies have recently examined is board gender diversity (Mukarram, Ajmal, and Saeed, 2018; Chen, Ni, and Tong, 2016; Galia and Zenou, 2012; Torchia et al., 2011). For example, Torchia et al. (2011) found that reaching a critical mass of women directors on boards increases the level of firm innovation. While the primary focus of their study was on board gender diversity and innovation, Dezsó and Ross (2012) also examined the relationship between female TMT members and R&D intensity and found that female representation in the TMT improves firm performance, but only to the extent that a firm’s strategy is focused on innovation. Although researchers have made a substantive effort to examine the link between leader gender and innovation, research examining the potential effect

female CEOs may have on organizational innovation is still underdeveloped in the literature. Thus, drawing from stereotype threat and expectancy violation theories as well as research on gender and risk-taking behavior, I argue that female CEOs, compared to their male counterparts, engage in higher levels of organizational innovation, as measured by research and development (R&D) intensity and new product introductions (NPIs from here on out).

First, given that organizational innovation strategies involve inherent risk, and that risk-seeking behavior is often associated with masculine characteristics (Pettersson, 2007; Blake and Hanson, 2005), female CEOs may have to endure a stereotype threat (Inzlicht and Schmader, 2012) within their organizations. In fact, Proudfoot et al. (2015) found that males' ideas are evaluated as more innovative/creative than females' ideas and that female executives are seen as stereotypically less ingenious than their male counterparts when evaluated by their bosses (who are mostly men). Further, the authors found that while stereotypically masculine behavior increases a man's perceived creativity, the same behavior does not elevate a woman's perceived creativity, and such an increase in men's perceived creativity is mediated by attributions of agentic behavior even after controlling for competence of both groups. Also, perceived creativity is found to predict the reward deservingness for male executives. These findings may not only explain why women are not advancing to top leadership positions but also shows why they keep battling such perceptions of their creativity, competencies, risk propensity and independence-all attributes related to innovative strategies. This is consistent with a survey conducted by IBM that found about 60% of the 1,500 CEO respondents consider creativity as the most important leadership quality, compared with 52% for integrity and 35% for global thinking (Carr, 2012). Thus, I suggest that female CEOs being well aware of such biases will act proactively, adjust

their attitudes strategically and demonstrate behaviors consistent with masculinist characteristics. That is to say that they will openly adopt the ‘counter-stereotype’ attitude (Chisik, 2015; Stapel, and Koomen, 1998). Consistent with this argument, research shows that the more women feel an identity threat, the more they show agentic and masculinist behavior and outperform their male counterparts in masculine stereotyped managerial roles (Bergeron, Block, and Echtenkamp, 2006). In other words, they will adopt a “hawkish” strategic posture. According to expectancy violation theory (Jussim et al., 1987; Burgoon, 1985), out-group members (e.g., female CEOs) who show risk-taking behavior and independence will be perceived as violating their socially accepted out-group characteristics (e.g., communal, cooperative, risk-averse) and will be critically evaluated by in-group members (e.g., males). Empirical findings on this theory have shown that out-group members with favorable behaviors are more positively evaluated than in-group members who show identical attitudes (Schaumberg and Flynn, 2017; Taynor and Deaux, 1973). For example, one can expect to see more praise directed toward a female CEO who pioneered an innovative strategy than a male CEO as innovative activities are considered as more of a male behavior than a female one and female CEOs may get more credit for violating the expectancies on a favorable issue. Also, in their recent study, Schaumberg and Flynn (2017) have found further evidence for the theoretical position that female advantage reveals itself in the link between leadership evaluations and self-reliance as self-reliant female leaders are seen as similarly competent, but more communal, than self-reliant male leaders are. Therefore, I expect that female CEOs will activate their counter-stereotype attitude and engage in more risk-taking and innovation strategies such as allocating more capital to R&D, pursuing more NPIs and entering new markets. In fact, several scholars hypothesized that women’s presence in executive

roles influences firm innovation in several ways (Foss, Lee, Murtinu and Scalera, 2017; Dezsö, and Ross, 2012). For instance, Foss et al. (2017) in their recent study found that female executives are associated with a greater likelihood of firm R&D investments and new product/service introductions. Similarly, Dezsö, and Ross (2012) showed that women's presence in a TMT increases firm performance, however, only to the extent that a firm's strategy is focused on innovation. Thus, based on the above arguments, I propose the following hypothesis:

H3: Female CEOs, compared to their male counterparts, engage in higher levels of organizational innovation.

3.6.1 The Proportion of Female Directors on the Board as a Moderator

It is an intriguing dilemma for female CEOs as to whether to display agentic and masculinist behavior and violate the socially sanctioned gender roles and expectations (e.g., risk-seeking, independent), or simply refrain from 'rocking the boat', act as the 'token' CEO, and conform to the traditional female gender role expectations. Part of the answer to this dilemma may depend on contingencies such as the presence of other out-group members potentially sharing similar attitudes-namely, female directors. Thus, it is plausible to expect that female CEOs feel less identity threat and more empowerment with the presence of a higher proportion of female directors on the board. In addition, it is very possible that both female CEOs and directors share similar risk-taking attitudes and act as a 'sounding board' during deliberations of organizational innovation.

First, as aforementioned, studies have shown that a higher percentage of female directors on boards provide female peers such as female CEOs with an internal support system (Konrad et al., 2008), opportunity for more informal social interaction and coalition formation (Elstad and

Ladegard, 2012), as well as quality board deliberations (Joshi and Roh, 2009; van Knippenberg et al., 2004), all of which contribute to a healthier, fairer, and effective decision-making process. Naturally, all these positive factors surrounding female CEOs may ‘clear the air’ on stereotype threat (Hoyt and Simon, 2011) or at least make it less relevant so that their cognitions are more focused on the pursuit of innovative strategies. Additionally, female CEOs, feeling more empowered and supported, may engage in more risk-seeking behaviors and seek risky innovative strategies.

Second, given that female directors and CEOs share the same out-group identity and possibly similar risk-taking attitudes, the presence of female directors may help female CEOs assemble a coalition that favors their vision and strategies in formulating organizational innovation. For example, despite the findings that women are more risk-averse compared to their male counterparts, research has shown that women directors are not risk-averse and even show more risk tolerance than their male counterparts. For example, Adams and Rangunathan (2017), analyzing data on directors’ characteristics and behaviors (educations, attendance, risk taking, etc.), have found that women directors in the banking sector do not show lower risk tolerance than their male counterparts. Further, linking risk-taking behavior to innovation, several scholars have examined the relationship between board gender diversity and organizational innovation (Mukarram, Ajma and Saeed, 2018; Chen, Ni, and Tong, 2016; Galia and Zenou, 2012; Torchia et al., 2011; Miller and Triana, 2009). For example, Mukarram, Ajma and Saeed’s (2018) study demonstrates that a greater proportion of women directors serving on technology firms’ boards is positively related to firms’ risk-taking behavior in innovation, measured as R&D spending. Further, while Torchia et al. (2011) showed that reaching a critical

mass of women directors on boards enhances the level of firm innovation, Galia and Zenou (2012) found a positive relationship between gender diversity on boards and marketing innovation. Accordingly, based on the above arguments, I propose the following hypothesis:

H3a: The proportion of female directors on the board positively moderates the relationship between the presence of female CEOs and the level of organizational innovation such that female CEOs will engage in higher (lower) levels of organizational innovation, when there is a higher (lower) proportion of female directors on the board.

3.6.2 Predecessor CEO Exit as a Moderating Variable

Research has shown that CEO turnover has important implications for organizational innovation (Bereskin and Hsu, 2012; Cao, Maruping, and Takeuchi, 2006). Specifically, when a firm's external environment undergoes considerable change and the incumbent CEO's knowledge, skills and expertise become obsolete and misfit with a firm's newly adopted strategies, the dismissal of a CEO is viewed as an inevitable event. Further, the literature has been documenting the adverse effects of CEO dismissals on firm outcomes. For example, Denis and Denis (1995) found that CEO dismissals result in considerable downsizing of operations and heightened corporate control activities. Wiersema (1995) showed that firms that force their CEOs to exit often perform worse than those that replace their CEOs in a routine succession (e.g., voluntary exit). Literature suggests that firms produce better performance by achieving a balance between exploration and exploitation strategies (Levinthal and March 1993). Here, exploration refers to new knowledge and opportunities that help a firm to grow and gain long-term prosperity through organizational innovation (McGrath, 2001). In contrast, exploitation refers to existing routines where firms refine their capabilities and knowledge to improve their

short-term productivity and efficiency (Winter and Szulanski 2001). Consequently, after the dismissal of a CEO, firms will be in search of a new CEO who can revitalize the company by bringing in new knowledge, perspectives and expertise, and utilize these capabilities to improve performance. Thus, CEO turnovers are considered as adaptive events creating opportunities for firms to initiate strategic reorientations that align with the changes in the external environment, engage in innovative activities, and improve performance (Wiersema and Bantel 1993).

Given the discussion above, I argue that a female CEO will engage in higher levels of organizational innovation when the predecessor CEO is dismissed. First, a predecessor CEO's dismissal as opposed to voluntary exit will set the stage for female CEOs to overcome the gender-specific stereotype threat. Specifically, female CEOs will display a counter-stereotypical attitude and cope with the perceptions that they violate the prescribed expectancies (i.e., make less risk-laden strategies) when engaging in risky choices and innovation. Second, dismissed predecessor CEOs will create a favorable context for female CEOs in which they will be scrutinized less and gain more support from TMT members and board of directors when formulating organizational innovation. Based on the above arguments, I propose the following hypothesis:

H3b: A predecessor CEO exit (voluntary vs. dismissal departure) positively moderates the relationship between the presence of female CEOs and the level of organizational innovation such that female CEO-led firms engage in higher levels of organizational innovation when the predecessor CEO is dismissed.

3.6.3 CEO Outsider Status as a Moderating Variable

Research has found that there has been an ongoing trend in selecting CEOs through external hiring rather than internal promotions (Murphy and Zabochnik, 2007). Specifically, recent findings from the combined data from two studies (Cummings and Knott, 2018; Murphy and Zabochnik, 2007) showed that proportion of outside CEOs doubled in 20 years (from 1980 to the 2000s). Murphy and Zabochnik (2007) argue that the increase in outside CEOs, in part, stems from the rise in the popularity of CEOs having general skills such as human and financial capital. A rise in appointing outside CEOs cannot be attributed to this factor alone, however viewing outside CEOs with 'general skills' more favorably than inside CEOs with context-specific skills may have consequences for firms that specialize in certain innovative activities. In fact, context-specific skills are found to enhance CEOs' dynamic managerial capabilities (Helfat & Martin, 2015), which ultimately impact the choice of firm strategies (i.e., organizational innovation). Recent research by Cummings and Knott (2018), based on interviews of Chief Technology Officers (CTOs) proposed that the increase in outsider CEOs may partially explain the 65% drop in R&D productivity. They further argue that such a decline stems from outside CEOs' lack of expertise in the technological domain that is essential to effectively guide R&D activities. Further, the authors, using large-scale quantitative analysis, found that firm R&D productivity declines during the tenure of outside CEOs-compared to inside CEOs- and this decline is more pronounced for firms with high R&D intensity and for firms hiring outsider CEOs with lack of context-specific knowledge. Similarly, Bereskin and Hsu (2012) found that internally hired top executives are found to engage in more innovative activities compared to their outsider counterparts, supporting some recent and prior findings that insider CEOs' firm-specific

knowledge and expertise is more likely to promote organizational innovation compared to experiences gained from outside the firm.

Based on the arguments above, I propose that the outsider female CEOs engage in lower levels of organizational innovation (i.e., R&D intensity, NPIs). First, it is important to highlight that a change in CEO (e.g., from insider to outsider status or vice versa) results in major changes in innovation strategies (e.g., R&D spending). In fact, anecdotal evidence and interview of CFOs suggest that many firms (e.g., General Motors under Michael Armstrong, GE under Jack Welch) changed their views from seeing ‘R&D as a driver of growth’ to ‘R&D as an expense’ under the helm of outside CEOs (Cummings and Knott, 2018). Second and relatedly, given that domain-specific knowledge and expertise is essential in initiating and effectively managing innovative activities, outside female CEOs (especially when they are hired from outside the industry) may approach existing innovation efforts in a different light. For example, I argue female CEOs may display more risk-averse behavior when they think there is information asymmetry between their knowledge and expertise and the firm’s existing innovation strategies. I also argue that female CEOs’ risk aversion toward initiating and implementing organizational innovation will be exacerbated by potentially harsh socialization process they often face within their organizations. As such, they will shift the emphasis from investing in innovation that provides long-term benefits to harvesting short-term returns to appeal to the shareholders. Accordingly, based on the above arguments, I propose the following hypothesis:

H3c: CEO outsider status negatively moderates the relationship between the presence of female CEOs and the level of organizational innovation such that firms led by outsider female CEOs engage in lower levels of organizational innovation.

3.6.4 Past Firm Performance as a Moderating Variable

Do female CEOs engage in higher levels of innovation following poor firm performance? While many scholars from different disciplines have extensively examined the firm performance consequences of innovation (Gunday, Ulusoy, Kilic, and Alpkan, 2011; Adner and Kapoor, 2010; Sampson, 2007; Thornhill, 2006; Calantone, Cavusgil, and Zhao, 2002; Lumpkin and Dess, 2001), others examined the performance antecedents of innovation (Singh, 1986; Whetten, 1981; Manns and March, 1978; Chandler, 1966). For example, Singh (1986) examined how firms respond to performance decline in the contexts of organizational innovation, risk and return. He developed theoretical arguments around the notion that organizational innovations are the results of, among other factors, successful risk-taking, and that such risk-taking behavior may be seen as a 'corrective' action following poor firm performance (Cyert and March, 1963). Consistent with this argument, Singh (1986) found that while declining performance is related to high risk-taking in organizational decision-making and strong performance is related to low risk-taking. In fact, prospect theory suggests that individuals tend to be risk-averse when the prospects are positive and display more risk-taking when prospects are negative (Kahneman & Tversky, 1979). In a business context, the tenets of this theory suggest that while poor performance is associated with risk-seeking behavior, strong performance is related to risk-aversion (Holmes, Bromiley, Devers, Holcomb, and McGuire, 2011; Kahneman & Tversky, 1979). Further, research suggests that implementation of innovation strategies can allow financially declining firms to change their strategic orientation and experience a performance turnaround. For example, Ndofor, Vanevenhoven and Barker III (2013) have found that

innovation strategies such as NPIs (among other actions) to be positively associated with firm turnarounds in dynamic industries.

In light of this discussion, I argue that past poor firm performance will provide female CEOs with an advantageous context in which to prove themselves effective and creative by pursuing organizational innovation. Accordingly, based on the above arguments, I propose the following hypothesis:

H3d: Past firm performance negatively moderates the relationship between the presence of female CEOs and the level of organizational innovation such that female CEOs will engage in higher (lower) levels of organizational innovation following poor (good) past firm performance.

3.6.5 Industry Dynamism as a Moderator

Another contextual element that may help female CEOs activate their risk-seeking propensity is the extent to which their firms' past strategies are aligned with their industry. Past research has examined the managerial implications of dynamic environments (Simsek, Heavey, and Veiga, 2010; Dess and Lumpkin, 2005; Haleblian and Finkelstein, 1993; Miller, 1991). For example, Haleblian and Finkelstein (1993), drawing from social psychology research, have explored the role of TMT size and CEO dominance on firm performance in dynamic environments. The authors found that while firms with large teams performed better, firms managed by dominant CEOs performed worse in turbulent environments compared to stable ones. On the other hand, Simsek et al. (2010), using survey data from CEOs of 129 firms, found that CEOs' core self-evaluations were positively related to firms' entrepreneurial orientation (measured as innovativeness, risk taking, and proactiveness) and this relationship is stronger in firms operating in dynamic environments, but negligible in stable environments. Despite these

works, the link between female CEOs' propensity toward organizational innovation and how this relationship unfolds in dynamic environments is less examined in the literature. Thus, to fill this gap, I propose that a female CEO, possibly leading a firm with poor performance in a dynamic environment, tend to carefully interpret the dynamic environment and formulate 'corrective' strategies. One such corrective strategy for firms to survive environmental mismatch and poor performance is to engage in innovation (Melville, Gurbaxani, and Kraemer, 2007; Peterson and Berger, 1971). For example, Peterson and Berger (1971) argued that the use of corporate entrepreneurship in the popular music industry is crucial for coping with environmental threats. Further, in dynamic environments, firms' decision-makers, mostly top executives and especially CEOs are often required to accelerate the strategic-decision making process to keep up with the changes in high-velocity environments (Eisenhardt, 1989). For example, an analysis of the PC industry revealed that enhanced performance in high-velocity environments is gained through the managers' innovative activities in IT infrastructure (Sambamurthy, Bharadwaj, and Grover, 2003) to gain real-time information (Eisenhardt, 1989). Surely, dynamic capabilities such as responsiveness to markets, rapid product design, and managerial capability to redeploy resources are very critical (Melville et al., 2007) in rapidly changing environments. Accordingly, based on the above arguments, I propose the following hypothesis:

H3e: Industry dynamism positively moderates the relationship between female CEO presence and the level of organizational innovation such that female CEOs will engage in higher (lower) levels of organizational innovation in more (less) dynamic industries.

3.7 Chapter Summary

In this chapter, first, I provide a detailed discussion of the theoretical background leading up to the hypothesis development. Specifically, while I rely on the tenets of stereotype threat and expectancy-violation theories to explain whether and under what conditions female CEOs, compared to their male counterparts, engage in strategic change and organizational innovation, arguments from socialization theory are used to explain whether and under what conditions female CEOs, compared to their male counterparts, engage in strategic conformity. In the following chapter, I will provide an in-dept discussion of the methodology I use in this study.

CHAPTER IV

METHODOLOGY

In this chapter I discuss in detail the research design and methodological approaches of this dissertation. First, I present the characteristics of the sample that will be used in this dissertation, followed by a description of the data sources. Second, I provide a detailed discussion of measures and operationalizations of the variables of interest in the dissertation. Finally, I conclude with a discussion of the analytical strategies that will be used to empirically test the hypothesized relationships.

4.1 Sample and Data Sources

I tested my hypotheses using the population of U.S based, publicly traded corporations listed in the Standard & Poor's 1500 (S&P 1500) index, using 2010-2017 as the sampling window. The S&P 1500 index is a broad equity index and is weighted by market capitalization. It consists of three major indices: S&P 500, the S&P MidCap 400, and the S&P SmallCap 600, accounting for approximately 90% of U.S. market capitalization (S&P Dow Jones Indices, 2019).

I chose this data source for the following reasons. First, this data source allows for greater generalizability of the study's findings, since it is composed of large firms from a wide range of industries in the manufacturing and service sectors. Second, because firms in the S&P 1500 index are required to file their proxies (DEF 14A's) with the Securities and Exchange

Commission (SEC), using firms from this index allows me to obtain the corporate governance and other firm related data necessary to test my predictions. Third, given that this dissertation's focus is on whether female CEOs engage in risky strategies (such as strategic change and organizational innovation), I argue that demonstrating the effect female CEOs have on firm outcomes for large corporations-that are involved more in risk-laden strategies (Greve, 2011)-would have greater ramifications in terms of female leaders' effectiveness and value in large corporate settings. In addition, given that only 5.8% of companies in the S&P 500 have female CEOs, using the S&P 1500 index allowed me to maximize the number of female CEO observations in this dissertation.

Finally, following past studies (Haynes and Hillman, 2010; Westphal and Fredrickson, 2001) that examined strategic change using firms listed in the S&P 500 index, I designed the study's dataset around female CEO presence in the year 2012 so that I can test whether or not female CEOs initiate strategic change during their post-appointment tenure (2013-2017). In addition, I selected female CEOs who have fairly longer tenures (i.e., 5 + years) so that I can create an adequate composite measure for strategic conformity and strategic change variables. Also, I measured the dependent variables- strategic conformity, strategic change and organizational innovation for years 2013 to 2017, while I measured the independent variable- female CEO presence- and the moderating variables in year 2012 with the exception of predecessor CEO exit and average past performance (2010-2011). Finally, I collected data on the control variables for years 2013- 2017.

I opted to use a more recent, five-year sample window for two reasons, respectively: (1) the recent surge in hiring female CEOs (Ecohen, 2019), and (2) the manageability of the dataset.

Also, I expected the dataset to include a large number of observations as I used a panel data analysis (i.e., firm-year observations). Firms were excluded if complete data on corporate strategy and performance were unavailable.

I used several data sources to construct a panel dataset. The data for computing the dependent variables (strategic change and strategic conformity), past firm performance, industry dynamism, as well as all organizational control variables were collected from the Compustat database. One of the measures of organizational innovation (i.e., NPIs) was collected from the Lexus-Nexus database. Additionally, data on boards of directors, CEOs and top management teams (TMTs) were obtained from SEC proxy filings, ExecuComp and BoardEx. Finally, I collected data on CEO functional background from several web sites (i.e., Bloomberg Businessweek, Hoovers.com, corporate websites and press releases, and SEC proxy filings).

Propensity score matching

Given that only 5.8 % of S&P 500 companies are led by female CEOs (Burnett, 2018), random sampling of firms led by female CEOs would be infeasible. Thus, because I aim to compare female and male CEOs on strategic conformity, strategic change and organizational innovation, I constructed a matched pair sample to test the hypotheses (Li, 2013; Harris and Bromiley, 2007). Following prior research, I used a propensity score matching method to construct a matched-pair sample (Boivie, Graffin, Oliver, and Withers, 2016; Li, 2013). This method allowed me to design a control sample of firms (also known as counterfactuals) that are led by male CEOs that display no observable differences in characteristics relative to the firms run by female CEOs (Faccio et al., 2014). More specifically, the only distinguishable

characteristics of each pair of matched CEOs is gender. Employing a matching pair sample therefore alleviated some of the concerns regarding sample selection bias.

To utilize this methodology, I first calculated the propensity score using the following covariates as predictors: Return on Assets (ROA), sales growth, the natural log of total assets, the natural log of firm age, and French and Fama's 49 industry categories (Faccio et al., 2014). Doing so ensured that that the firms in the control sample (i.e., firms led by male CEOs) or “counterfactuals” are virtually similar to the firms run by female CEOs. Furthermore, these six predictor variables were lagged by one year from the outcome variable (presence of female CEO) in the probit analysis. I used the “psmatch2” user written command in STATA 14 with a nearest neighbor matching (one to one matching) without replacement and common support options (Boivie et al., 2016) to generate the matched sample of female and male-led firms. I then conducted the hypothesis tests using this matched sample.

4.2 Measures

4.2.1 Dependent Variables

4.2.1.1 Strategic change (full measure). Strategic change is defined as “a difference in the form, quality, or state over time (Van de Ven and Poole, 1995) in an organization's alignment with its external environment” (Rajagopalan and Spreitzer, 1997). While some scholars suggest that it is a change in a specific aspect of the firm, such as the firm's diversification portfolio, R&D investment intensity, or advertising/sales intensity, others argued that strategic change can be better conceptualized as the overall change in a firm's resource allocation in multiple important dimensions (Zhang and Rajagopalan, 2010; Mintzberg, 1973). In line with the definition espoused by the latter group of scholars, I used six strategic indicators to measure

strategic change: (1) changes in advertising intensity (advertising/sales), (2) research and development intensity (R&D/sales), (3) plant and equipment newness (net P&E/gross P&E), (4) non-production overhead (SGA expenses/sales), (5) inventory levels (inventories/sales), and (6) financial leverage (debt/equity)- that are used by many researchers (Zhang and Rajagopalan, 2003, 2010; Karaevli, 2007; Carpenter, 2000; Finkelstein and Hambrick, 1990). Following these scholars, I first calculated the absolute values for differences in each of these ratios between the current year (t) and the prior year (t-1) for the sampling window. Then, I standardized the absolute values within the sample (mean = 0, standard deviation = 1). Finally, the average of the six standardized values were used as the composite measure of strategic change. However, some of the data in COMPUSTAT were missing due to firms' lack of reporting (i.e., R&D expenses), absence of particular expenses, or the expenses are reported under a different section of a statement (i.e., SG&A). Thus, to address the missing variable issue, I calculated the resource allocation ratios twice. First, following earlier literature (Finkelstein and Hambrick, 1990; Haynes and Hillman, 2010), I calculated all six ratios by replacing missing data with 'zeros.' This measure I refer to as full measure of strategic change. I then developed an alternative I refer to as reduced measure strategic change. In this instance I removed the most common missing variables (R&D, advertising, and inventory) and only calculated the remaining three ratios (i.e., plant and equipment newness (net P&E/gross P&E), non-production overhead (SGA expenses/sales), financial leverage (debt/equity)).

Carpenter (2000) argues that if these ratios continue at similar levels over time, firms are considered as committing to the current status quo while a large difference in these ratios would mean significant changes in a firm's resource allocations. Also, while non-production overhead

and inventory levels are concerned with operational expenses and efficiency, and the debt-to-equity ratio is a well-established measure of financial leverage, R&D intensity, plant and equipment newness, and advertising intensity are basic measures of resource allocation. Further, using these six indicators is theoretically meaningful as they are all within the discretion of firm executives while each one emphasizes an important dimension of a firm's strategic profile. Additionally, these indicators can be reliably compared across firms and within and between industries (Finkelstein and Hambrick, 1990).

4.2.1.2 Strategic conformity (full measure). This variable measures the extent to which a corporation's strategy is aligned with the average strategic portrait of its rivals in the same industry. Specifically, strategic conformity is the extent to which a firm's strategy profile follows the central tendencies of the industry (Geletkanycz & Hambrick, 1997).

To operationalize strategic conformity, I followed the widely used approach introduced by Finkelstein and Hambrick (1990) and Deephouse (1999) as their measurement methods have been heavily used by scholars in this domain (Miller et al., 2013; Delgado-García et al., 2010; Geletkanycz & Hambrick, 1997).

Similar to strategic change measures, I used the six strategic indicators to measure strategic conformity: (1) change in advertising intensity (advertising/sales), (2) change in research and development intensity (R&D/sales), (3) change in plant and equipment newness (net P&E/gross P&E), (4) change in non-production overhead (SGA expenses/sales), (5) inventory levels (inventories/sales), and (6) change in financial leverage (debt/equity)- that are used by many researchers (Zhang and Rajagopalan, 2003, 2010; Karaevli, 2007; Carpenter, 2000; Finkelstein and Hambrick, 1990). Next, I standardized each strategic indicator by industry,

using data points from sample firms only (mean = 0, standard deviation = 1). Then, I calculated the absolute difference between a firm's score on a strategic indicator and the average score for sample firms in that industry. I then multiplied these absolute differences by minus one and created the strategic conformity score by summing all these six indicators (Finkelstein and Hambrick, 1990, p. 492). Here, it is important to note that while the strategic change variable measures the absolute differences in each of these ratios between the current year and the prior year (within firm), strategic conformity measures the absolute differences between the focal firm's score and the average score for other firms in that industry for each ratio (within industry). Organizational Innovation. To test the hypothesis related to organizational innovation, I used two different measures: NPIs and R&D intensity.

4.2.1.3 NPIs (new product introductions). Using the Lexus-Nexus database, I measured NPIs as “the total number of new product introductions for each firm” during the sample window (Li et al., 2013).

4.2.1.4 R&D intensity. Another measure of organizational innovation is R&D intensity. Given that I aim to examine whether and under what circumstances female CEOs tend to engage in more (or less) risk-taking activities, I examined the effect of female CEOs on organizational innovation (as measured in R&D intensity). Following past research (Hambrick and MacMillan, 1985), I measured R&D Intensity as a firm's spending on research and development activities divided by its sales.

4.2.1.5 Presence of a female CEO. Given that I seek to explore the effect of female CEO leadership on firm strategic change, conformity and organizational innovation, the independent variable in this study is presence of Female CEO. I operationalized this independent variable as

binary, assigning ‘1’ if a firm was led by a female CEO during the study’s sampling window and ‘0’ otherwise.

4.2.2 Moderating Variables

4.2.2.1 The proportion of female directors. As discussed previously, one potential contingency that may influence female CEOs’ effect on strategic change is the proportion of female directors serving on the board. Accordingly, to account for the impact female director representation may have on female CEOs’ propensity to engage in firm-level strategic change, I operationalized this variable as the number of female directors divided by the total number of directors on the board.

4.2.2.2 The predecessor CEO exit type. Because the nature of predecessor CEO’s departure may signal whether the board of directors wants a change in the leadership paradigm and strategic direction of the firm, it is important to examine this contingency variable. Research suggests that while voluntary exits may not necessarily be related to a board’s inclination to change the CEO paradigm, forced (or dismissal) CEO exits may signal firm stakeholders and a potential successor that the board is seeking to change the existing direction and strategies of the firm (Hambrick and Cannella, 2009; Zhang, 2006; Fondas and Wiersema, 1997). Thus, relying on earlier research of CEO dismissals (Zhang, 2006; Shen and Cannella, 2002), I coded CEO exits either as ‘voluntary’ or ‘dismissal’ using the following methods. First, I conducted a comprehensive search of news report databases such as Lexis-Nexis Universe database, Mergent Online, and corporate announcements and identify the predecessor CEO departures prior to female CEOs. Then, I analyzed the news announcements and coded the announcement as a dismissal (‘1’) if: (a) the CEO was reported to have been fired, (b) the CEO was reported to have

resigned for reasons such as poor performance, personal issues, or scandals etc., or (c) the CEO took early retirement after discussions of poor performance. On the other hand, CEO successions that resulted from the predecessor CEO's death, health issues, or personal problems, the CEO's appointment to a similar role at another company, a merger (or acquisition), mandatory retirement due to age (if any), or the CEO's continuance as a board member after accepting a similar role at another company were coded as voluntary exit ('0').

4.2.2.3 CEO outsider status. Consistent with prior studies of CEO outsider status (Zhang and Rajagopalan, 2006; Harris and Helfat, 1997; Cannella and Lubatkin, 1993), I code an outsider CEO succession "1" if the CEO was hired from outside the firm or had a firm tenure of less than two-years prior to being appointed, and "0" otherwise.

4.2.2.4 Past firm performance. Given that declining financial performance creates the need for strategic change (Nakauchi and Wiersema, 2014; Barker and Duhaime, 1997), it is important to understand to what extent past firm performance influences female CEOs' willingness to initiate strategic change. Accordingly, following prior studies, I used return on assets (ROA), averaged over two years prior to the independent variable- female CEO presence (2010-2011), to measure the firm's past firm performance (Shen and Cannella, 2002; Karaevli and Zajac, 2013) ROA data was collected from the COMPUSTAT database.

4.2.2.5 Industry dynamism. Another contingency determining female CEOs' willingness to engage in strategic change are the characteristics of their firm's industry environment. As discussed previously, female CEOs will have more discretion in their firm's strategic direction when their firms operate in dynamic industries. Accordingly, following prior research (Melville, Gurbaxani, and Kraemer, 2007; Datta, Guthrie, and Wright, 2005; Keats and

Hitt, 1988), I measured the level of industry dynamism using a two-step approach: (1) first, I regressed the logarithm of average sales for each three-digit industry in the sample against time, and (2) then I divided the resulting standard error of the regressor by average industry sales. This operationalization created an index measuring the volatility and dynamism of each industry.

4.2.3 Control Variables

4.2.3.1 Organizational level controls. To account for possible confounding factors that impact a firm's strategic change, I controlled for executive, organizational, and industry level variables (Nakauchi and Wiersema, 2015; Zhang and Rajagopalan, 2010). Organizational level controls include firm size, firm age, and slack resources. I controlled for firm age and size given that they are associated with the direction and magnitude of strategic change (Fombrun and Ginsberg, 1990). I operationalized firm size as the logarithm of the number of employees for years 2013- 2017 (e.g., Guthrie and Olian, 1991) and firm age as the number of years since the firm's founding using 2017 as the cut-off year. Because sales data were used as a denominator in most of the components of the strategic change measure, I included industry-adjusted sales change in my models as a control variable so that the strategic change measure was not affected by this common denominator. For example, I calculated the firm's three-year ($t-1$, t , and $t+1$) variance in sales and subtracted the industry average variance in sales from this number to control for industry effects. Finally, research has found that unabsorbed slack resources have strong effects on organizational innovation as these resources enable firms to explore new ideas, purchase technology, and absorb the costs of initiating innovations (Suzuki, 2018; Damanpour, 1991). Thus, I measured unabsorbed slack resources by dividing sample firms' current assets by current liabilities at the end of each fiscal year (Suzuki, 2018).

4.2.3.2 Executive level controls. Executive level controls include proportion of female executives, CEO functional background, and CEO tenure. First, given that female executives may share similar cognitive and psychological processes with female CEOs in terms of risk-taking behaviors and revealing their authentic selves in more gender diverse settings (Hoobler et al., 2018; Elstad and Ladegard, 2012; Joshi and Roh, 2009) and thus willing to seek strategic change, I controlled for the proportion of female executives serving on TMTs. The proportion of female executives was calculated as the number of female executives (excluding the female CEO) divided by the total number of the top management team (TMT) members. I concurred with Bertrand and Schoar's (2003) definition of TMT size (the top five highest paid executives) when calculating this variable. Also, prior research suggests that CEOs' demographic backgrounds such as functional background may affect their willingness to engage in strategic change (Karaevli and Zajac, 2013; Datta, Rajagopalan, and Zhang, 2003). Hence, relying on the categories Hambrick and Mason (1984) have created for CEO functional background, I measured this variable by identifying the longest period a CEO spent in one of two functional groupings: output (marketing and sales) or throughput (operations, R&D, and engineering) by constructing two dummy variables-one for output and one for throughput. Finally, literature suggests that the number of years a top executive spends in a position influences his/her attitudes toward organizational innovation (Damanpour and Schneider, 2006) and strategic change (Huber, G. P., Sutcliffe, K. M., Miller, C. C., & Glick, W. H. (1993). Hence, to mitigate the confounding effects of CEO tenure on these firm strategies, I operationalized CEO tenure by counting the years a CEO had been in office.

Additional executive control variables include board size, board independence, and CEO duality. I controlled for these executive level variables as they may affect strategic change (Rajagopalan and Spreitzer, 1997). Specifically, research shows that board size (Goodstein, Gautam, and Boeker, 1994) and board independence (Brunninge, Nordqvist, and Wiklund, 2007) impact firms' inclinations for strategic change. Thus, to mitigate the confounding effects of these two board structure components, I measured board size as the total number of directors on the board. Board independence was measured as the ratio of outside directors to the total number of directors on the board (Zajac and Westphal, 1996). Finally, the successor CEO's chairperson status may impact her/his power and influence in charting the firm's direction and discretion in strategic choices (Muller-Kahle and Schiehl, 2013; Weng and Lin, 2014). Hence, I controlled for this variable by assigning "1" to the CEO duality measure if a successor CEO also held the chair position, and "0" otherwise.

4.2.3.3 Industry level controls. I also controlled for industry fixed effects by including the French and Fama 49 industry categories in the model. Furthermore, to ensure that the results were not affected by time-related factors, I included a dummy variable for each year (year fixed effect) in the model (Karaevli and Zajac, 2013). In Table 9 below, I provide the variable description and operationalizations.

Table 8: Variable Descriptions and Operationalization

Variables	Data Sources	Definition	Operationalization	Year Measured
Strategic change (full measure)	Compustat	Strategic change is defined as “the variation over time in a firm’s pattern of resource allocation in key strategic dimensions that goes beyond industry-wide changes in these dimensions” (Zhang and Rajagopalan, 2010, p. 335).	A composite variable of six strategic indicators: (1) advertising intensity (advertising/sales), (2) research and development intensity (R&D/sales), (3) plant and equipment newness (net P&E/gross P&E), (4) non-production overhead (SGA expenses/sales), (5) inventory levels (inventories/sales), and (6) financial leverage (debt/equity). I first calculated the absolute values for differences in each of these ratios between the current year (t) and the prior year (t-1) for the sampling window, and then adjust for the industry effect by subtracting the industry median changes in these ratios. Then, I calculated the absolute values of the industry-adjusted changes for each of these ratios and standardized the absolute values within the sample (mean = 0, standard deviation = 1). Finally, the average of the six standardized values was used as the composite measure of strategic change. To alleviate the missing variable issue, I calculated all six ratios by replacing missing data with ‘zero’ in the first case (full measure of strategic change).	2013-2017
Strategic change (reduced measure)	Compustat		Strategic change (reduced measure). I removed the most common missing variables (R&D and advertising) and only calculated the remaining four ratios (i.e., plant and equipment newness (net P&E/gross P&E), inventory levels (inventories/sales), non-production overhead (SGA expenses/sales), financial leverage (debt/equity).	2013-2017
Strategic conformity	Compustat	Strategic conformity is the degree to which the firm's business	I used the six strategic indicators to measure strategic conformity: (1) change in advertising intensity (advertising/sales), (2) change in research and development intensity (R&D/sales), (3) change in plant and equipment	2013-2017

		strategy profile adheres to central tendencies of the industry” (Geletkanycz and Hambrick, 1997, p.666).	newness (net P&E/gross P&E), (4) change in non-production overhead (SGA expenses/sales), (5) inventory levels (inventories/sales), and (6) change in financial leverage (debt/equity)- that are as well used by many researchers (Zhang and Rajagopalan, 2003, 2010; Karaevli, 2007; Carpenter, 2000; Finkelstein and Hambrick, 1990). Next, I standardized each strategic indicator by industry, using data points from sample firms only (mean = 0, standard deviation = 1). Then, I calculated the absolute difference between a firm's score on a strategic indicator and the average score for sample firms in that industry. I then multiplied these absolute differences by minus one and created the strategic conformity score by summing all these six indicators (Finkelstein and Hambrick, 1990, p. 492).	
Organizational innovation	Compustat, Lexus-Nexus database	“An innovation can be a new product or service, a new production process technology, a new structure or administrative system, or a new plan or program pertaining to organizational members” (Damanpour, 1991, p.556).	NPI (i.e., new product introduction) and R&D Intensity: NPIs: I measured new product introduction as “the total number of new product introductions for each firm” during the sample window (Li et al., 2013) R&D Intensity: Following past research (Hambrick and MacMillan, 1985), I measured R&D Intensity as a firm’s spending on research and development activities divided by its sales.	2013- 2017
Female CEO presence	SEC proxy filings and	Describes a situation where a	Coded ‘1’ if a firm was led by a female CEO during the study’s sampling window and ‘0’ otherwise	2012

	ExecuComp	firm is led by a female CEO		
The proportion of female directors on boards	BoardEx	Ratio of female directors serving on a board	The number of female directors divided by the total number of directors on the board	2012
The predecessor CEO exit type	SEC proxy filings and ExecuComp	Refers to a turnover event in which the predecessor CEO's departure is characterized in certain terms	Coded a CEO as dismissal ('1') if: (a) CEO was reported to be fired, (b) CEO was reported to resign due to reasons such as poor performance, personal issues, or scandals etc., and (c) CEO took an early retirement after discussions of poor performance. On the other hand, CEO successions that resulted from predecessor CEO's death, health, or personal problems, CEO's appointment to a similar role at another company, a merger (or acquisition), or CEO's continuance as a board member after accepting a similar role at another company were coded as voluntary exit ('0')	-
Past firm performance	Compustat	Refers to the past financial health/stability of a firm	Used return on assets (ROA), averaged for two years (2010-2011) to measure the firm's past firm performance	2010-2011
Industry dynamism	Compustat	"A change that is hard to predict and that heightens uncertainty for key organizational members" (Dess and Beard, 1984, p. 56).	Measured using a two-step approach: (1) taking logarithm of sales for each three-digit industry for the sample years and regressing it against time, and (2) then dividing the resulting standard error of the regressor by the average industry sales	2012
CEO outsider status	SEC proxy filings,	Describes a situation in which	Code an outsider female CEO succession "1" if she was hired from outside the firm or had a firm tenure of less than two-	2012

	ExecuComp, and BoardEx	the CEO is appointed from outside the firm and has no long-tenured prior affiliation with the firm	years prior to being appointed, and “0” otherwise	
Firm size	Compustat and Mergent Online	Refers to the number of wage-earners employed by each firm	The logarithm of the average number of employees	2013-2017
Firm age	Compustat and Mergent Online	Refers to the number of years since the firm’s founding	The number of years since the firm’s founding, using 2017 as cut-off year	2013-2017
Proportion of female executives	SEC proxy filings and ExecuComp	Ratio of female executives in a TMT	The number of female executives (excluding the female CEO) divided by the total number of the top management team (TMT)	2013-2017
Unabsorbed Slack resources	Compustat	Refers to organizational slack that is “excess, liquid, and uncommitted resources in an organization” (Suzuki, 2018)	I measured unabsorbed slack resources by dividing sample firms’ current assets by current liabilities at the end of each fiscal year.	2013-2017
CEO functional background	Bloomberg Businessweek, Hoovers.com, corporate websites and	Specific work experiences CEOs have gained	The longest time a CEO spent in either functional area: output (marketing and sales) or throughput (operations, R&D, and engineering) through constructing two dummy variables-one for output and one for throughput	2013-2017

	press releases, and SEC proxy filings			
Board size	BoardEx	The number of directors serving on a board	The total number of directors for each firm in the sample	2013-2017
Board independence	BoardEx	Directors who are not affiliated with the top executives of the firm	The ratio of outside directors to the total number of directors on the board	2013-2017
CEO duality	ExecuComp	Describes a situation when the CEO also holds the role of the chairperson of the board	Coded “1” if a successor CEO also holds a chair position, and “0” otherwise	2013-2017
CEO tenure	ExecuComp	Refers to years a CEO had been in office	I measured CEO tenure by counting the years a CEO had been in office.	2013-2017
Industry sector	Compustat	Consists of firms with highly similar business activities	I used French and Fama 49 industry categories to control for industry fixed effects.	2013-2017

4.3 Analytical Approach

This section discusses the statistical methods and model estimation I used to test the study's hypotheses. I used a five-year (2013-2017) panel dataset in my analysis. To determine the most appropriate data analysis approach, I used specification and postestimation techniques. First, I performed a Hausman test (Hausman, 1978) to determine if a random or fixed effects approach is more appropriate for the analysis. While the null hypothesis (Ho) of this test suggests the use of random effects in a model (Green, 2008), the alternative hypothesis (Ha) suggests that the fixed effects estimator is preferred. Specifically, if I fail to reject the null hypothesis, the appropriate estimator I should use in my model is the random effects. On the other hand, if the null hypothesis is rejected, then I should use a fixed effects estimator in my model. Hence, I ran the Hausman test for the models used in this study. The results of the Hausman test suggested the use of random effects for Model 1 and 2 of Strategic Change (Chi-square = 6.74; n.s.), Model 1 and 2 of Strategic Conformity (Chi-square = 20.64; n.s.), Model 1 of Organizational Innovation-NPIs-(Chi-square = 9.67; n.s.), and finally Model 1 of R&D Intensity (Chi-square = 17.89; n.s.).

Although the Hausman test results suggested the use of a random effect model, past research (Zhang & Rajagopalan, 2009; Haynes & Hillman, 2006; Zhang, 2006) examining the effects of senior leaders on strategic change and strategic conformity have used various statistical methods (e.g., GEE, linear regression, GLS, etc.), depending upon the nature of their dataset. Hence, for two reasons, I decided to use generalized least squares (GLS) as the primary analytical approach. First, the GLS estimator is a generalization of the ordinary least squares (OLS) estimator. It is used to handle situations where the OLS is not the best linear unbiased

estimator because assumptions of the Gauss-Markov theorem (homoskedasticity and absence of serial correlation) are violated. In such instances, the GLS estimator is the best linear unbiased estimator (Taboga, 2017).

Second, my dependent variables (strategic change, strategic conformity, and R&D intensity) were likely to be autocorrelated within a panel (each firm-CEO is considered as a panel). Because serial correlation in panel data models creates biased standard errors and leads to less efficient results, scholars need to determine if such a correlation exists in their data models (Drukker, 2003; Wooldridge, 2002). Management scholars have recently adopted the Wooldridge test to detect the presence of panel-level heteroskedasticity and autocorrelation. Therefore, using the STATA command `xtserial`, I ran the Wooldridge test for the null hypothesis (H_0 : no first-order autocorrelation) that there is no serial correlation in the specification. The results of the Wooldridge test indicated the presence of a serial correlation in the panel data ($F(1, 130) = 11.761$; $\text{Prob} > F = 0.0008$). GLS is a robust and efficient estimator for panel data that involves significant incidents of heteroscedasticity (Zhang & Rajagopalan, 2009). Hence, I ran the GLS regression models using the STATA command `xtgls` (`xtgls`, Stata 16). In all models, I lagged the independent and control variables by one year. In addition, since my dependent variables (strategic change, strategic conformity, and part of organizational innovation-R&D intensity) are autocorrelated within the panel, I corrected for panel-specific autocorrelation using the option of `corr(psara)` which stands for panel-specific auto-correlation coefficient: AR (1) (Zhang & Rajagopalan, 2009).

As mentioned, the third dependent variable, organizational innovation, was measured in two ways: New Product Introductions (NPIs) and R&D intensity. Because NPI was measured

as the number of new product introductions during the sampling window, the appropriate models to test the NPI hypotheses are either panel poisson or panel negative binomial regressions. Over-dispersion occurs when the conditional variance (5.617) exceeds the conditional mean (1.550). Negative binomial can be considered a special case of generalization of poisson regression since it has the same mean structure as poisson regression, and it has an extra parameter to model the over-dispersion. If the distribution of the outcome variable is over-dispersed, the confidence intervals for the negative binomial regression are likely to be narrower as compared to those from a poisson regression model (Long & Jeremy Freese, 2005). However, a negative binomial distribution is recommended as a robust way to estimate correlated count data with over-dispersion (Wooldridge serial correlation test: $F(1, 132) = 6.024$; $\text{Prob} > F = 0.0154$) (Long & Jeremy Freese, 2005; Cameron & Trivedi, 2009). In all models, I lagged the independent and control variables by one year. In addition, since my dependent variable (i.e., NPI) was likely to be autocorrelated within the panel, I corrected for panel-specific autocorrelation using the option of `corr(psara)` for panel-specific auto-correlation coefficient: AR (1) (Zhang & Rajagapolan, 2009).

Additionally, I checked the values for variance inflation factor (VIF) in order to detect the presence of multicollinearity among the study's independent variables testing (Hair et al., 2010). Research methods literature suggests that large VIF values are indicative of multicollinearity among the independent variables (Hair et al., 2010). My posttest suggested that all of the independent and control variables have VIF values of less than 10 with the highest VIF value of 1.82, the mean VIF of 1.23, and the lowest VIF value of 1.05. Thus, I determined that there were no multicollinearity concerns in the analyses.

4.3.1 Endogeneity

Since the appointments of female CEOs do not occur randomly, and it is possible that firms select female CEOs when they want to signal external stakeholders that the company plans to erase the impact of the predecessor CEO and engage in various strategic choices (Triana et al., 2014), there may be a potential issue of endogeneity. In other words, such instances may cause a potential difficulty in identifying the independent effects of a female CEO presence apart from other factors that may simultaneously result in strategic change. Thus, I needed to minimize the omitted variable bias in the model. To mitigate the potential endogenous relationship between presence of female CEOs and my dependent variables (strategic change, strategic conformity and organizational innovation), I used a two-stage Heckman model. The Heckman (1979) two-stage model is one of the most widely adopted procedures to correct for endogeneity in management research (e.g., Weng & Lin, 2012; Quigley & Hambrick, 2012).

In the first stage, I estimated the likelihood of a female CEO presence (1=yes, 0=no) using a probit model for the full sample, which consisted of firms that both did and did not experience female CEO succession events during the study period (N = 665) by using instrumental variables.

In this study, I identified industry political leaning, degree of female labor participation at the industry level, and percentage of female legislators where the firm headquarters reside as relevant exogenous covariates that are likely to predict the presence of female CEOs but are not necessarily associated with the dependent variables. I used the proportion of female legislators in state legislatures in which my sample firms' headquarters are located as one predictor since

the level of relative gender equality has been shown to predict the presence of greater gender diversity in leadership roles (Sugarman & Straus, 1988). In addition, I included the proportion of industry female labor participation (4 digit SIC), as it was shown to influence the likelihood of female leadership appointments (Hillman et al., 2007).

Industry political leaning is the final exogenous instrumental variable included, as research suggests that left-leaning industries are more likely to have greater levels of female leadership in top positions (Terjesen, Aguilera, & Lorenz, 2015). The data on industry political leaning was collected from a non-profit organization called “OpenSecrets.org” (Center for Responsive Politics: <https://www.opensecrets.org/>). The U.S. Bureau of Labor Statistics was the source of data on female labor force participation rates, and the National Conference of State Legislatures (NCSL) website (<http://www.ncsl.org/>) was used for collecting data on the percentages of female legislators in each state where sample firms were headquartered. Additionally, board diversity, firm age, and firm size were entered in the first stage probit model. The result of the stage 1 probit model is included in the Appendix section. Using the predicted values calculated in the first stage probit model, I then calculated the Inverse Mills Ratio and included it as a control variable in the second stage (main analyses) models in which I tested the extent to which, and under what circumstances, female CEOs engage in strategic change, strategic conformity, and organizational innovation. Overall, the results of the first stage probit analysis partially supports the use of the exogenous instrumental variables (i.e., industry political leaning, degree of female labor participation at the industry level, and percentage of female legislators).

4.4 Chapter Summary

In this chapter, I first provided a detailed discussion of sample design and data sources I used in this study. Within the sample design section, I have also explained the steps I used to construct the propensity score matching to mitigate the potential bias that may result from non-random sampling. Next, the detailed description the study's variables (dependent, independent, moderator and control variables) are presented. I also include the Table 9 above explaining the variable names, their definitions, operationalizations, and the sample window they will be measured. Finally, a discussion of the analytical approach used to test the proposed hypotheses are presented. Additionally, to mitigate the potential bias in the results, I explained how I addressed endogeneity concerns in this study. In the following chapter, I present the findings of the data analyses using four major sections: 1) descriptive statistics and main effects, 2) moderating variables, 3) robustness check, and 4) supplemental analysi

CHAPTER V

RESULTS

In this chapter, I present the findings of my data analyses. I organize this chapter into four major sections. In the first section, I provide the descriptive statistics (means, standard deviations), correlations of the study's variables along with the tests for the main effect predictions. The second section presents the results of the empirical tests for the moderating hypotheses. In the third section, I present the results of the robustness check pertaining to the alternative operationalizations for strategic change and strategic conformity. Finally, the results of the supplemental analysis on two additional moderating variables (CEO tenure and board independence) on strategic change and strategic conformity are presented.

5.1 Descriptive Statistics and Main Effects

5.1.1 Descriptive Statistics

Table 10 and 11 below report the means, standard deviations and correlations of the study's variables. Female CEO status is negatively correlated with strategic conformity ($r = -.13$, $p < .01$), as well as R&D intensity ($r = -.09$, $p < .01$). On the other hand, female CEO status is positively correlated with NPIs ($r = .11$, $p < .01$).

Table 9: Means, Standard Deviations and Correlations

	Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1	Strategic Change ⁴	-17.78	20.56	1									
2	Strategic Conformity ⁵	1.55	0.09	-0.577***	1								
3	NPI	0.85	0.15	-0.005	0.026	1							
4	R&D Intensity	0.03	0.08	-0.088**	0.062	0.075*	1						
5	Female CEO	0.32	0.46	0.060	-0.130***	0.110***	-0.094**	1					
6	Past Performance	0.06	0.44	0.043	-0.059	0.130***	-0.097**	0.109***	1				
7	Outsider CEO	0.28	0.44	-0.002	0.060	0.021	-0.028	-0.134***	-0.023	1			
8	Industry Dynamism	9.39	7.97	-0.04	0.024	-0.025	-0.012	0.027	-0.013	-0.061	1		
9	Predecessor CEO Exit ²	0.28	0.45	0.119***	0.011	0.145	-0.048	0.031	0.010	0.160***	0.001	1	
10	Prop. Of Female Directors	0.22	0.1	0.038	-0.022	0.124***	-0.194***	0.408***	0.067*	-0.033	-0.041	0.148***	1
11	CEO Tenure	7.69	7.07	-0.000	-0.073*	-0.080**	0.076**	-0.186***	0.008	-0.129***	0.093**	-0.135***	-0.282***
12	Prop. Of Female Executives	0.19	0.67	-0.014	0.008	0.019	-0.055	0.105***	0.056	-0.037	0.066*	-0.007	-0.002
13	CEO Duality	0.37	0.48	0.144***	-0.141***	-0.012	-0.135***	-0.006	0.059	-0.081**	0.030	-0.027	0.002
14	Firm Age	38.54	37.9	0.050	-0.095	-0.051	-0.190***	0.110***	-0.001	-0.103***	0.001	-0.054	0.121***
15	Board Size	9.48	2.1	0.013	0.092**	0.079**	-0.105***	0.049	-0.010	-0.144***	0.013	-0.076*	0.120***
16	Board Independence	0.87	0.14	-0.047	0.095**	-0.004	-0.061	0.011	-0.006	-0.020	-0.056	0.022	0.105***
17	CEO Functional Background ¹	0.25	0.43	0.059	0.030	0.152***	-0.016	0.065*	0.145***	0.132***	0.026	-0.027	0.024
18	Unabsorbed Slack Resources	2.09	0.07	0.055	-0.138***	0.003	0.330***	-0.080**	0.030	-0.039	-0.040	-0.071*	-0.114***
19	Firm Size ³	26.85	57.28	-0.15***	0.059	-0.032	0.006	0.214***	0.019	-0.087**	0.120***	-0.044	0.161***

*p < 0.10, **p < 0.05, ***p < 0.01, ¹ Coded 0= Output, 1=Throughput, ² Coded: 1 = Dismissal and 0 = Voluntary, ^{3, 4, 5} Log of variables.

Table 10: Means, Standard Deviations and Correlations Continue

	Variables	Mean	SD	11	12	13	14	15	16	17	18
11	CEO Tenure	7.69	7.07	1							
12	Prop. of Female Executives	0.19	0.67	0.041	1						
13	CEO Duality	0.37	0.48	0.236***	0.022	1					
14	Firm Age	38.54	37.9	-0.059	-0.001	0.133***	1				
15	Board Size	9.48	2.1	-0.165***	-0.082**	0.107***	0.228***	1			
16	Board Independence	0.87	0.14	-0.144	-0.019	-0.071*	0.042	0.007	1		
17	CEO Functional Background ¹	0.25	0.43	0.064*	0.101***	0.033	-0.105***	0.067*	-0.052	1	
18	Unabsorbed Slack Resources	2.09	0.07	0.260***	-0.031	0.032	-0.209	-0.312***	-0.141***	-0.006	1
19	Firm Size ³	26.85	57.28	-0.088**	0.020	-0.043	0.226***	0.131***	0.018	0.093**	-0.046

*p < 0.10, **p < 0.05, ***p < 0.01, ¹ Coded 0= Output, 1=Throughput, ² Coded: 1 = Dismissal and 0 = Voluntary, ^{3,4,5} Log of variables.

5.1.2 Main Effects: “Hawkish” or “Dovish”: The Effect of Female CEOs on Strategic Change, Strategic Conformity, and Organizational Innovation

Hypothesis 1 predicted that female CEOs, compared to their male counterparts, engage in more strategic change. The results are presented in Table 12 below. Because the strategic change variable is measured as both full and reduced (i.e., excluding advertising and R&D intensity) composite formats, I present the results of strategic change in two models. Specifically, as shown in Model 1, the coefficient for female CEO predicting strategic change (full) is statistically significant ($B= 0.23, p < .01$). In addition, as shown in Model 2, the coefficient for female CEO predicting strategic change (reduced) is statistically significant ($B= 0.23, p < .01$). Hence, Hypothesis 1 is supported.

Hypothesis 2 predicted that female CEOs, compared to their male counterparts, engage in more strategic conformity. The results are presented in Table 12 below. Because the strategic conformity variable is measured as both full and reduced composite formats, I present the results of strategic conformity in two models. Specifically, as shown in Model 3, the coefficient for female CEO predicting strategic conformity (full) is statistically significant but in the opposite predicted direction ($B= -0.03, p < .01$). In addition, as shown in Model 4, the coefficient for female CEO predicting strategic conformity (reduced) is statistically significant but in the opposite predicted direction ($B= -0.01, p < .01$). Hence, Hypothesis 2 is not supported.

Hypothesis 3 predicted that female CEOs engage in higher levels of organizational innovation. Organizational innovation is measured as both new product introductions (NPIs) and R&D Intensity. Findings for both measures are presented accordingly. As can be seen from Model 1 of Table 13 below, the presence of female CEOs is a statistically significant predictor of NPIs ($B= .35, p < .05$). On the other hand, as shown in Model 2 below, the presence of female

CEOs is not a statistically significant predictor of R&D Intensity ($B = .01$, n.s.). Hence, Hypothesis 3 is partially supported.

Table 11: Female CEOs, Strategic Change and Strategic Conformity

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full) ⁴	Model 2 (Reduced) ⁵	Model 3 (Full)	Model 4 (Reduced)
Constant	1.33 (0.44) ***	1.62 (0.44) ***	1.48 (0.04) ***	1.85 (0.00) ***
Inverse Mills ratio	0.00 (.014)	0.00 (.01)	0.00 (0.00)	0.001 (0.00)
Firm Size ¹	-0.06 (0.20) ***	-0.06 (0.02) ***	0.00 (0.00)	0.00 (0.00) *
CEO Duality	0.30 (.08) ***	0.29 (.08) ***	-0.02 (0.01) *	-0.02 (0.00) ***
Board Independence	-0.15 (0.43)	-0.14 (0.43)	0.02 (0.02)	0.01 (0.00)
CEO Output Background ²	-0.06 (0.09)	-0.06 (0.08)	0.02 (0.01)	0.01 (0.00)
Prop. of Female Executives	-0.08 (0.11)	-0.08 (0.11)	0.01 (0.01)	0.01 (0.00)
CEO Tenure	0.01 (0.01)	0.01 (0.01)	-0.01 (0.01)	0.00 (0.00)
Unabsorbed Slack Resources	0.02 (0.03)	0.02 (0.03)	- 0.00 (0.00)	- 0.00 (0.00)
Board Size	-0.02 (0.02)	-0.02 (0.02)	0.01(0.00) ***	0.00 (0.00)
Firm Age	0.06 (0.04)	0.06 (0.04)	-0.01 (0.00) *	- 0.00 (0.00)
Industry Fixed Effect ³	Included	Included	Included	Included
Year Fixed Effect	Included	Included	Included	Included
Female CEO	0.23 (0.09) ***	0.23 (0.09) **	-0.03 (0.01) ***	-0.01 (0.00) ***
Wald Chi-Square	78.53***	77.67***	46.40***	72.09***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, Standard errors are in parentheses, ¹Log of number of employees, ² Coded 0= Output, 1=Throughput, ³French & Fama 49 industry categories. ⁴Full model (consist of six strategic indicators: advertising intensity, R&D intensity, P&E newness, non-production overhead, inventory levels, financial leverage). ⁵Reduced model (consist of four strategic indicators: P&E newness, non-production overhead, inventory levels, financial leverage).

Table 12: The Effect of Female CEOs on Organizational Innovation

Variables	Organizational Innovation	
	New Product Introductions (NPIs) ^a	Research & Development (R & D) Intensity ^b
	Model 1	Model 2
Constant	1.32 (0.74) **	-0.02 (0.04) **
Inverse Mills ratio	0.01 (0.03)	0.01 (0.00) ***
Firm Size ¹	-0.03 (0.03)	0.00 (0.00)
CEO Duality	-0.02 (0.13)	-0.01 (0.00) *
Board Independence	-0.96 (0.61)	0.01 (0.03)
CEO Output Background ²	0.33 (0.14) **	-0.00 (0.00)
Prop. of Female Executives	-0.06 (0.09)	-0.01 (0.00)
CEO Tenure	-0.02 (0.01) **	-0.00 (0.00)
Board Size	0.03 (0.03)	0.01 (0.00) *
Firm Age	-0.07 (0.07)	-0.00 (0.00)
Unabsorbed Slack Resources	-0.00 (0.01)	0.02 (0.00) ***
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO	0.35 (0.13) **	0.01 (0.01)
Wald Chi-Square	56.78 ***	109.10***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, ¹Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories. ^a Panel Negative Binomial regression, ^b Generalized Least Squares.

5.2 Executive, Organizational and Industry Moderators

In this section, I present the results of the executive (CEO outsider status, predecessor CEO exit and proportion of female directors), organizational (past firm performance) and industry level (industry dynamism) moderators affecting the relationship between female CEOs and the three outcome variables (i.e., strategic change, strategic conformity and organizational innovation).

5.2.1 Executive Level Moderators

In this section, I present the findings for executive (CEO outsider status, predecessor CEO exit and Proportion of female directors) level moderating variables.

5.2.1.1 CEO outsider status as a moderator. Hypothesis 1c predicted that CEO outsider status positively moderates the relationship between female CEOs and the level of strategic change such that female CEOs engage in more strategic change when they are hired from outside of the firm. As shown in Model 1 of Table 14 below, CEO outsider status (coded 0=insider, 1=outsider) is a statistically significant moderator of the relationship between female CEOs and strategic change (full model), but in the opposite direction ($B = -.61, p < .01$). Similarly, model 2 shows that CEO outsider status is a statistically significant moderator of the relationship between female CEOs and strategic change (reduced model) but in the opposite direction ($B = -.61, p < .01$). Hence, Hypothesis 1c is not supported.

Hypothesis 2c predicted that CEO outsider status negatively moderates the relationship between female CEOs and the level of strategic conformity such that female CEOs engage in less strategic conformity when they are hired from outside of the firm. As shown in Model 3 of Table 14 below, CEO outsider status is not a statistically significant moderator of the

relationship between female CEOs and strategic conformity (full model) -($B = .03$, n.s.). Model 4 indicates CEO outsider status is a statistically significant moderator of the relationship between female CEOs and strategic conformity (reduced model) but in the opposite direction ($B = .01$, $p < .05$). Hence, Hypothesis 2c is not supported.

H3c predicted that the CEO outsider status negatively moderates the relationship between presence of female CEOs and organizational innovation (measured as NPIs and R&D Intensity) such that firms led by outsider female CEOs engage in lower levels of organizational innovation. As shown in Model 1 of Table 15 below, CEO outsider status is not a statistically significant moderator between female CEO and NPIs ($B = .43$, n.s.). On the other hand, as shown in Model 2 below, CEO outsider status is a marginally significant moderator between female CEO and R&D Intensity ($B = .04$, $p < 0.10$), however in the opposite direction of that predicted. Hence, H3c is not supported.

Table 13: The Moderating Effect of CEO Outsider Status– Panel GLS Regression ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.05 (0.48) **	1.44 (0.48) ***	1.48 (0.05) ***	1.84 (0.00) ***
Inverse Mills ratio	0.00 (0.01)	0.00 (0.02)	-0.00 (0.00)	0.00 (0.00)
Firm Size ¹	-0.07 (0.02) ***	-0.07 (0.02) ***	0.00 (0.00)	0.01 (0.00) *
CEO Duality	0.26 (0.08) ***	0.26 (0.08) ***	-0.03 (0.00) ***	-0.01 (0.00) ***
Board Independence	0.01 (0.47)	0.02 (0.48)	0.08 (0.05)	0.00 (0.00)
CEO Output Background ²	-0.07 (0.09)	-0.07 (0.09)	0.00 (0.00)	0.00 (0.00)
Prop. of Female Executives	-0.13 (0.14)	-0.13 (0.14)	0.00 (0.01)	0.00 (0.00)
CEO Tenure	-0.01 (0.01)	-0.01 (0.01)	0.00 (0.00)	0.00 (0.00)
Unabsorbed Slack Resources	0.02 (0.03)	0.02 (0.03)	-0.00 (0.00)	-0.00 (0.00)
Board Size	-0.01 (0.02)	-0.02 (0.02)	0.00 (0.00)	0.00 (0.00)
Firm Age	0.06 (0.04)	0.07 (0.04)	-0.00 (0.00)	-0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	0.42 (0.01) ***	0.43 (0.11) ***	-0.04 (0.01) ***	-0.01 (0.00) ***
CEO Outsider Status	0.18 (0.10) *	0.18 (0.10) *	-0.01 (0.01)	-0.01 (0.00) *
Female CEO X CEO Outsider Status	-0.61 (0.19) ***	-0.61 (0.20) ***	0.03 (0.02)	0.01 (0.00) **
Wald Chi-Square	81.02***	80.34***	54.27***	66.53***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories.

Table 14: The Moderating Effects of CEO Outsider Status on Organizational Innovation

Variables	Organizational Innovation	
	New Product Introduction ^a	Research & Development (R & D) Intensity ^b
	Model 1	Model 2
Constant	1.59 (0.75) **	-0.01 (0.04)
Inverse Mills ratio	0.01 (0.03)	0.00 (0.00) ***
Firm Size ¹	-0.02 (0.03)	0.00 (0.00)
CEO Duality	0.01 (0.13)	-0.01 (0.00)
Board Independence	-1.01 (0.61) *	0.00 (0.04)
CEO Output Background ²	0.41 (0.14) ***	-0.00 (0.00)
Prop. of Female Executives	-0.05 (0.08)	-0.01 (0.01)
CEO Tenure	-0.03 (0.01) ***	-0.00 (0.00) **
Board Size	0.02 (0.03)	0.00 (0.00)
Firm Age	-0.07 (0.07)	0.00 (0.00)
Unabsorbed Slack Resources	0.07 (0.03) **	0.01 (0.00) ***
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO	0.21 (0.15)	-0.00 (0.01)
CEO Outsider Status	-0.37 (0.17)	-0.02 (0.01) **
Female CEO X CEO Outsider Status	0.43 (0.31)	0.04 (0.02) *
Wald Chi-Square	64.98 ***	110.22 ***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, ¹ Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories. ^a Panel Negative Binomial regression, ^b Generalized Least Squares.

5.2.1.2 The predecessor ceo exit type as a moderator. Hypothesis 1b predicted that the type of predecessor CEO exit positively moderates the relationship between female CEOs and the level of strategic change such that the relationship is stronger if the predecessor CEO was dismissed. The results in Models 1 and 2 of Table 16 shows, that the type of predecessor CEO exit is not a statistically significant moderator of the relationship between female CEOs and strategic change, both under the full ($B = -.22$, n.s.) and reduced models ($B = -.23$, n.s.), respectively. Hence, Hypothesis 1b is not supported.

Hypothesis 2b predicted that the predecessor CEO exit negatively moderates the relationship between female CEOs and the level of strategic conformity such that the relationship is weaker if the predecessor CEO was dismissed. As shown in Model 3 of Table 16 below, the interaction term for predecessor CEO exit type and female CEOs on strategic conformity (full model) has a marginally significant coefficient but in the opposite direction of that predicted ($B = .03$, n.s.). In model 4 below, predecessor CEO exit type is not a statistically significant moderator of the relationship between female CEOs and strategic change (reduced model) ($B = .01$, n.s.). Hence, Hypothesis 2b is not supported.

H3b predicted that predecessor CEO exit positively moderates the relationship between the presence of female CEOs and organizational innovation (NPIs and R&D Intensity) such that female CEO-led firms engage in higher levels of organizational innovation when the predecessor CEO is dismissed. As shown in Model 1 of Table 17 below, predecessor CEO exit is a statistically significant moderator of the female CEO - NPIs relationship ($B = 0.65$, $p < 0.05$). However, as shown in Model 2 below, predecessor CEO exit is not a statistically significant moderator of the female CEO-R&D Intensity relationship ($B = .02$, n.s.). Hence, H3b is partially

supported. In addition, the interaction plot for the effect of female CEO and predecessor CEO exit on organizational innovation (NPIs) is presented in Figure 5 below.

Table 15: The Moderating Effect of Predecessor CEO Exit Type ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.38 (0.48) ***	1.77 (0.48) ***	1.47 (0.05) ***	1.85 (0.00) ***
Inverse Mills ratio	0.00 (0.02)	0.00 (0.02)	-0.00 (0.01)	0.00 (0.01)
Firm Size ¹	-0.06 (0.02) ***	-0.06 (0.02) ***	0.00 (0.00)	0.00 (0.00) *
CEO Duality	0.28 (0.08) ***	0.28 (0.08) ***	-0.04 (0.01) ***	-0.00 (0.00) ***
Board Independence	-0.27 (0.48)	-0.27 (0.48)	0.10 (0.05)	0.01 (0.00)
CEO Output Background ²	-0.03 (0.09)	-0.03 (0.09)	0.01 (0.01)	0.00 (0.00)
Prop. of Female Executives	-0.13 (0.14)	-0.12 (0.14)	0.00 (0.01)	0.00 (0.00)
CEO Tenure	-0.01 (0.01) *	-0.01 (0.01) *	0.00 (0.00)	0.00 (0.00)
Unabsorbed Slack Resources	0.02 (0.03)	0.02 (0.03)	-0.00 (0.00)	-0.00 (0.00)
Board Size	-0.01 (0.02)	-0.01 (0.02)	0.00 (0.00)	0.00 (0.00)
Firm Age	0.05 (0.04)	0.05 (0.01)	-0.00 (0.00)	-0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	0.30 (0.10) ***	0.31 (0.11) ***	-0.04 (0.01) ***	-0.00 (0.00) ***
Predecessor CEO exit ⁴	0.08 (0.11)	0.08 (0.11)	-0.01 (0.01)	-0.00 (0.00)
Female CEO X Predecessor CEO exit	-0.22 (0.18)	-0.23 (0.19)	0.03 (0.02) *	0.01 (0.00)
Wald Chi-Square	75.25***	71.43***	58.63***	65.02***
N	660	660	657	658

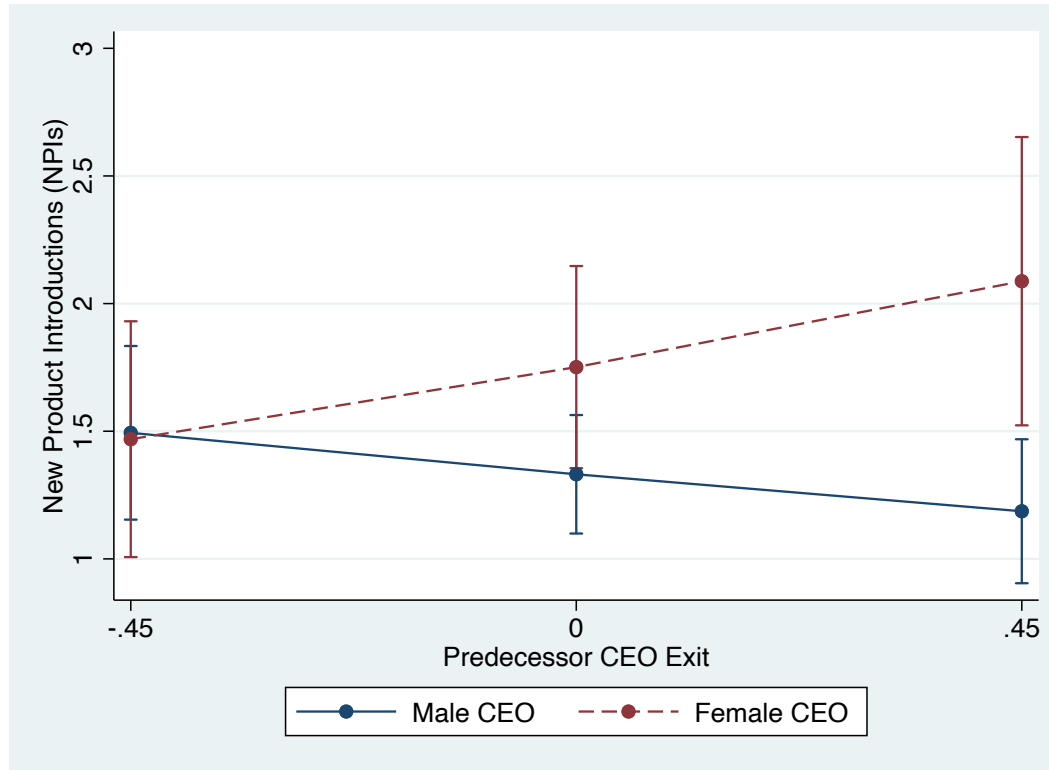
*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories, ⁴ Coded 0= CEO Voluntary Exit, 1= CEO Dismissal

Table 16: The Moderating Effects of Predecessor CEO Exit on Organizational Innovation

Variables	Organizational Innovation	
	New Product Introduction ^a	Research & Development (R & D) Intensity ^b
	Model 1	Model 2
Constant	1.31 (0.74) **	-0.07 (0.05) **
Inverse Mills ratio	0.01 (0.03)	0.01 (0.00) ***
Firm Size ¹	-0.02 (0.03)	0.00 (0.00)
CEO Duality	-0.02 (0.13)	-0.01 (0.00) *
Board Independence	-0.91 (0.59)	0.02 (0.04)
CEO Output Background ²	0.33 (0.14) **	-0.00 (0.00)
Prop. of Female Executives	-0.04 (0.08)	-0.01 (0.01)
CEO Tenure	-0.03 (0.01) ***	-0.00 (0.00)
Board Size	0.03 (0.03)	0.01 (0.00) *
Firm Age	-0.05 (0.07)	0.00 (0.00)
Unabsorbed Slack Resources	0.07 (0.03) **	- 0.01 (0.00) ***
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO	0.09 (0.16)	0.00 (0.01)
Predecessor CEO Exit	-0.26 (0.17)	-0.00 (0.01)
Female CEO X Predecessor CEO Exit	0.65 (0.27) **	0.02 (0.02)
Wald Chi-Square	57.34 ***	105.84 ***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, ¹ Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories. ^a Panel Negative Binomial regression, ^b Generalized Least Squares.

Figure 5: Effects of Female CEO and Predecessor CEO Exit on Organizational Innovation (NPIs) ^a



^a Predecessor CEO exit (at -1 and +1 s.d.)

5.2.1.3 The proportion of female directors as a moderator. Hypothesis 1a predicted that the proportion of female directors on the board positively moderates the relationship between female CEOs and the level of strategic change such that the relationship is stronger when there are more female directors on the board. As shown in Models 1 and 2 of Table 18 below, the coefficient for the proportion of female directors is not statistically significant under the full ($B = -.45$, n.s.) and reduced ($B = -.47$, n.s.) models. Hence, Hypothesis 1a is not supported.

Hypothesis 2a predicted that the proportion of female directors on the board negatively moderates the relationship between female CEOs and the level of strategic conformity such that the relationship is weaker when there are more female directors on the board. As shown in Models 3 and 4 of Table 18 below, the proportion of female directors is not a statistically significant moderator of the relationship between female CEOs and strategic conformity, both for the-full ($B = .03$, n.s.) and reduced models ($B = .01$, n.s.), respectively. Hence, Hypothesis 2a is not supported.

H3a predicted that the proportion of female directors positively moderates the relationship between presence of female CEOs and organizational innovation (NPIs and R&D Intensity) such that female CEOs will engage in higher (lower) levels of organizational innovation, when there is a higher (lower) proportion of female directors on the board. As shown in Model 1 of Table 19 below, the proportion of female directors is a statistically significant moderator of the female CEO-NPIs relationship ($B = 2.94$, $p < 0.05$). However, Model 2 of Table 19 below shows that the proportion of female directors is not a statistically significant moderator of the female CEO-R&D Intensity relationship ($B = .14$, n.s.). Hence, H3a is partially supported. In addition, the interaction plot for the effect of female CEOs and proportion of female directors on organizational innovation (NPIs) is presented in Figure 6 below.

Table 17: The Proportion of Female Directors as a Moderator ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.59 (0.51) ***	1.77 (0.52) ***	1.45 (0.06) ***	1.84 (0.00) ***
Inverse Mills ratio	-0.01 (0.02)	-0.01 (0.02)	0.01 (0.02)	0.00 (0.00) **
Firm Size ¹	-0.05 (0.02) **	-0.05 (0.02) **	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.28 (0.08) ***	0.28 (0.08) ***	-0.04 (0.01) ***	-0.00 (0.00) ***
Board Independence	-0.29 (0.47)	-0.28 (0.47)	0.10 (0.05)	0.01 (0.00)
CEO Output Background ²	-0.05 (0.09)	-0.05 (0.09)	0.01 (0.01)	0.00 (0.00)
Prop. of Female Executives	-0.09 (0.13)	-0.08 (0.13)	-0.00 (0.01)	0.00 (0.00)
CEO Tenure	-0.01 (0.01) *	-0.01 (0.01) *	0.00 (0.00)	0.00 (0.00) *
Unabsorbed Slack Resources	0.02 (0.03)	0.02 (0.03)	-0.00 (0.00)	-0.00 (0.00)
Board Size	-0.01 (0.02)	-0.01 (0.02)	0.00 (0.00)	0.00 (0.00)
Firm Age	0.05 (0.04)	0.06 (0.04)	-0.00 (0.00)	-0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	0.36 (0.23)	0.35 (0.23)	-0.04 (0.02) *	-0.00 (0.00) **
Prop. of Female Directors	-0.36 (0.72)	-0.16 (0.71)	0.04 (0.08)	0.01 (0.00)
Female CEO X Prop. of Female Directors	-0.45 (0.88)	-0.47 (0.88)	0.03 (0.09)	0.01 (0.00)
Wald Chi-Square	73.71***	73.08***	55.98***	71.78***
N	660	660	657	658

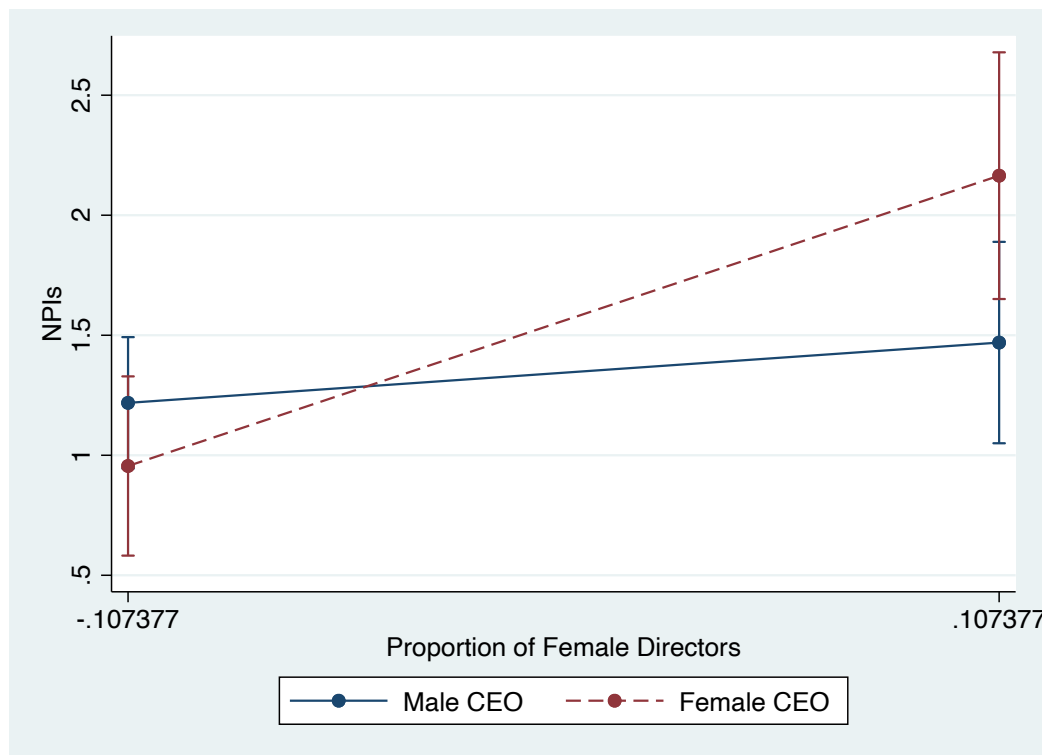
*p < 0.10, **p < 0.05, ***p < 0.01, ^aStandard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, ¹=Throughput, ³French & Fama 49 industry categories.

Table 18: The Moderating Effect of The Proportion of Female Directors ^a

Variables	Organizational Innovation	
	New Product Introductions ^a	Research & Development (R & D) Intensity ^b
	Model 1	Model 2
Constant	0.98 (0.76)	-0.06 (0.04) **
Inverse Mills ratio	0.04 (0.03)	0.01 (0.00) ***
Firm Size ¹	-0.03 (0.03)	0.00 (0.00)
CEO Duality	-0.02 (0.13)	-0.01 (0.00)
Board Independence	-0.85 (0.60)	0.02 (0.04)
CEO Output Background ²	0.34 (0.14) **	-0.00 (0.00)
Prop. of Female Executives	-0.09 (0.10)	-0.01 (0.01)
CEO Tenure	-0.02 (0.01) **	-0.00 (0.00)
Board Size	0.02 (0.03)	0.01 (0.00) *
Firm Age	-0.06 (0.07)	-0.00 (0.01)
Unabsorbed Slack Resources	-0.01 (0.05)	0.01 (0.00) ***
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO	-0.58 (0.34) *	-0.02 (0.02)
Prop. of Female Directors	0.87 (0.86)	-0.03 (0.06)
Female CEO X Prop. of Female Directors	2.94 (0.21) **	0.14 (0.09)
Wald Chi-Square	73.27 ***	105.98***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories. ^a Panel Negative Binomial regression, ^b Generalized Least Squares.

Figure 6: The Moderating Effect of The Proportion of Female Directors on Female CEO-Organizational Innovation (NPIs) ^a



^a The proportion of female directors (at -1 and +1 s.d.)

5.2.2 The Moderating Effect of Past Firm Performance on Strategic Change and Strategic Conformity

Hypothesis 1d predicted that past firm performance negatively moderates the relationship between female CEOs and the level of strategic change such that female CEOs engage less in strategic change following a period of strong past performance. As shown in Model 1 of Table 20 below, past firm performance is a statistically significant moderator of the relationship between female CEOs and strategic change (full model) ($B = -3.60, p < .01$). Similarly, model 2 shows that past firm performance is a statistically significant moderator of the relationship between female CEOs and strategic change (reduced model) ($B = -3.63, p < .01$). Hence, Hypothesis 1d is supported. The interaction plot for the effect of female CEOs and past firm performance on strategic change is presented in Figure 7 below.

Hypothesis 2d predicted that past firm performance positively moderates the relationship between female CEOs and the level of strategic conformity such that female CEOs engage more in strategic conformity followings strong past performance. As shown in Models 3 and 4 of Table 20 below, past firm performance is not a statistically significant moderator of the relationship between female CEOs and strategic conformity both in the full ($B = .10, n.s.$) and reduced models ($B = .01, n.s.$), respectively. Hence, Hypothesis 2d is not supported.

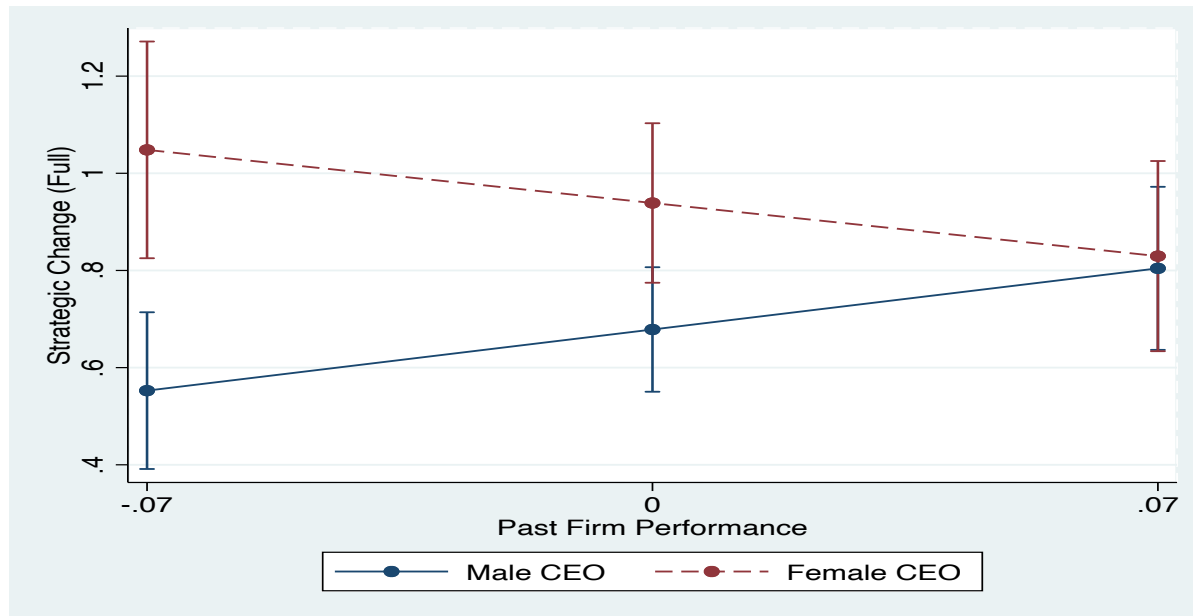
H3d predicted that the past firm performance negatively moderates the relationship between the presence of female CEOs and organizational innovation (NPIs and R&D Intensity) such that female CEOs will engage in higher (lower) levels of organizational innovation following poor (good) past firm performance. As shown in Model 1 of Table 21 below, past firm performance is not a statistically significant moderator of the female CEO-NPIs ($B = 0.16, n.s.$) on R&D Intensity ($B = -0.08, n.s.$) relationship. Hence, H3d is not supported.

Table 19: The Moderating Effect of Past Firm Performance ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.26 (0.47) ***	1.64 (0.47) ***	1.48 (0.05) ***	1.85 (0.00) ***
Inverse Mills ratio	0.00 (0.01)	0.00 (0.01)	-0.00 (0.00)	0.00 (0.00)
Firm Size ¹	-0.05 (0.02) ***	-0.05 (0.02) ***	0.00 (0.00)	0.01 (0.00) *
CEO Duality	0.27 (0.08) ***	0.27 (0.08) ***	-0.03 (0.00) ***	-0.01 (0.00) ***
Board Independence	-0.19 (0.47)	-0.18 (0.46)	0.08 (0.05) *	0.00 (0.00)
CEO Output Background ²	-0.02 (.08)	-0.02 (.08)	0.01 (0.00)	0.01 (0.00)
Prop. of Female Executives	-0.10 (0.12)	-0.10 (0.12)	0.00 (0.010)	0.01 (0.00)
CEO Tenure	-0.01 (0.00) *	-0.01 (0.00) *	0.01 (0.00)	0.01 (0.00)
Unabsorbed Slack Resources	0.02 (0.02)	0.02 (0.02)	-0.00 (0.00)	-0.00 (0.00)
Board Size	-0.02 (0.02)	-0.02 (0.02)	0.00 (0.00)	0.00 (0.00)
Firm Age	0.07 (0.04)	0.07 (0.04)	-0.01 (0.00)	-0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	0.48 (0.12) ***	0.48 (0.12) ***	-0.04 (0.01) ***	-0.01 (0.00) ***
Past Firm Performance	1.78 (0.75) **	1.81 (0.76) **	-0.07 (0.08)	-0.01 (0.01)
Female CEO X Past Firm Performance	-3.60 (1.22) ***	-3.63 (1.23) ***	0.10 (0.12)	0.01 (0.01)
Wald Chi-Square	89.00***	87.92***	57.12 ***	61.21 ***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories.

Figure 7: The moderating Effect of Past Firm Performance on Female CEO-Strategic Change Relationship ^{a b}



^a Past firm performance (at -1 and +1 s.d.)

^b Full composite model of strategic change is used.

Table 20: The Moderating Effects of Past Firm Performance on Organizational Innovation

Variables	Organizational Innovation	
	New Product Introduction (NPI) ^a	Research & Development (R & D) Intensity ^b
	Model 1	Model 2
Constant	1.22 (0.75) *	-0.04 (0.05) **
Inverse Mills ratio	0.01 (0.03)	0.01 (0.00) ***
Firm Size ¹	-0.02 (0.03)	0.00 (0.00)
CEO Duality	-0.03 (0.13)	-0.02 (0.01) *
Board Independence	-0.96 (0.69)	0.01 (0.04)
CEO Output Background ²	0.29 (0.14) **	-0.00 (0.00)
Prop. of Female Executives	-0.09 (0.10)	-0.01 (0.01)
CEO Tenure	-0.03 (0.01) **	-0.00 (0.00)
Board Size	0.03 (0.03)	0.00 (0.00) *
Firm Age	-0.09 (0.07)	-0.00 (0.01)
Unabsorbed Slack	-0.00 (0.01)	0.02 (0.00) ***
Resources		
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO	0.31 (0.17) *	0.02 (0.01)
Past Firm Performance	1.79 (0.95) *	-0.10 (0.07)
Female CEO X Past Firm Performance	0.16 (0.38)	-0.08 (0.12)
Wald Chi-Square	62.69 ***	113.67 ***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, 1 Log of number of employees, 2 Coded 0= Output, 1=Throughput, 3 French & Fama 49 industry categories. ^a Panel Negative Binomial regression, ^b Generalized Least Squares.

5.2.3 The Moderating Effect of Industry Dynamism on Strategic Change and Strategic Conformity

Hypothesis 1e predicted that industry dynamism positively moderates the relationship between female CEOs and the level of strategic change such that female CEOs engage in more strategic change in dynamic industries. As shown in Models 1 and 2 of Table 22, industry dynamism is not a statistically significant moderator of the relationship between female CEOs and strategic change both in the full ($B = .02$, n.s.) and reduced ($B = .01$, n.s.) models, respectively. Hence, Hypothesis 1e is not supported.

Hypothesis 2e predicted that industry dynamism negatively moderates the relationship between female CEOs and the level of strategic conformity such that female CEOs engage in less strategic conformity in dynamic industries. The results in Models 3 and 4 of Table 22 indicate that industry dynamism is not a statistically significant moderator of the relationship between female CEOs and strategic conformity in the full ($B = -.01$, n.s.) and the reduced models ($B = .01$, n.s.) respectively. Hence, Hypothesis 2e is not supported.

H3e predicted that industry dynamism negatively moderates the relationship between the presence of female CEOs and organizational innovation (NPIs and R&D Intensity) such that female CEOs will engage in higher (lower) levels of organizational innovation in more (less) dynamic industries. As shown in Models 1 and 2 of Table 23, industry dynamism is not a statistically significant moderator of the relationship between female CEOs and NPIs ($B = -0.01$, n.s.) on R&D intensity ($B = -0.01$, n.s.). Hence, H3e is not supported.

Table 21: The Moderating Effect of Industry Dynamism ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.55 (0.46) ***	1.94 (0.46) ***	1.47 (0.05) ***	1.84 (0.00) ***
Inverse Mills ratio	0.00 (0.1)	0.00 (0.1)	-0.00 (0.00)	0.00 (0.00)
Firm Size ¹	-0.06 (0.02) ***	-0.06 (0.02) ***	0.00 (0.00)	0.01 (0.00) **
CEO Duality	0.29 (0.08) ***	0.30 (0.08) ***	-0.03 (0.00) ***	-0.01 (0.00) ***
Board Independence	-0.16 (0.45)	-0.16 (0.45)	0.08 (0.05)	0.00 (0.00)
CEO Output Background ²	-0.06 (0.08)	-0.06 (0.08)	0.00 (0.00)	0.00 (0.00)
Prop. of Female Executives	-0.09 (0.12)	-0.08 (0.12)	0.00 (0.01)	0.00 (0.00)
CEO Tenure	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Unabsorbed Slack Resources	0.02 (0.02)	0.02 (0.02)	-0.00 (0.00)	-0.00 (0.00)
Board Size	-0.01 (0.02)	-0.01 (0.02)	0.00 (0.00)	0.00 (0.00)
Firm Age	0.06 (0.04)	0.06 (0.04)	-0.00 (0.00)	-0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	0.26 (0.15) *	0.25 (0.15) *	-0.03 (0.01) *	-0.00 (0.00) *
Industry Dynamism	-0.02 (0.02) ***	-0.02 (0.01) ***	0.00 (0.00)	0.00 (0.00)
Female CEO X Industry Dynamism	0.02 (0.01)	0.01 (0.01)	-0.01 (0.00)	0.01 (0.00)
Wald Chi-Square	89.32 ***	85.48***	55.35 ***	69.03 ***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories.

Table 22: The Moderating Effects of Industry Dynamism on Organizational Innovation

Variables	Organizational Innovation	
	New Product Introduction (NPI) ^a	Research & Development (R & D) Intensity ^b
	Model 1	Model 2
Constant	1.24 (0.76) **	-0.07 (0.05) **
Inverse Mills ratio	0.01 (0.03)	0.01 (0.00) ***
Firm Size ¹	-0.03 (0.03)	0.00 (0.00)
CEO Duality	-0.01 (0.13)	-0.02 (0.01) *
Board Independence	-0.95 (0.62)	0.02 (0.04)
CEO Output Background ²	0.35 (0.14) **	-0.00 (0.00)
Prop. of Female Executives	-0.27 (0.33)	-0.01 (0.01)
CEO Tenure	-0.03 (0.01) **	-0.00 (0.00)
Board Size	0.03 (0.03)	0.00 (0.00) *
Firm Age	-0.08 (0.07)	-0.00 (0.00)
Unabsorbed Slack Resources	0.01 (0.03)	0.01 (0.00) ***
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO	0.34 (0.19) *	0.03 (0.02)
Industry Dynamism	0.01 (0.01)	0.00 (0.00)
Female CEO X Industry Dynamism	-0.01 (0.01)	-0.00 (0.00)
Wald Chi-Square	60.26 ***	107.31 ***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³French & Fama 49 industry categories. ^a Panel Negative Binomial regression, ^b Generalized Least Squares.

Table 23: Summary of Hypotheses Tests Results

Effects	H	Relationships	Supported?
Main Effect	H1	Female CEOs and strategic change (+)	Yes
Main Effect	H2	Female CEOs and strategic conformity (+)	No
Main Effect	H3	Female CEOs and organizational innovation (+)	Yes
Moderator	H1a	Proportion of female directors on strategic change (+)	No
Moderator	H2a	Proportion of female directors on strategic conformity (-)	No
Moderator	H3a	Proportion of female directors on organizational innovation (+)	Yes
Moderator	H1b	Predecessor CEO exit (dismissal departure) on strategic change (+)	No
Moderator	H2b	Predecessor CEO exit (dismissal departure) on strategic conformity (-)	No
Moderator	H3b	Predecessor CEO exit (dismissal departure) on organizational innovation (+)	Yes
Moderator	H1c	CEO outsider status on strategic change (+)	No
Moderator	H2c	CEO outsider status on strategic conformity (-)	No
Moderator	H3c	CEO outsider status on organizational innovation (-)	No
Moderator	H1d	Past firm performance and strategic change (-)	Yes
Moderator	H2d	Past firm performance on strategic conformity (+)	No
Moderator	H3d	Past firm performance on organizational innovation (-)	No
Moderator	H1e	Industry dynamism on strategic change (+)	No
Moderator	H2e	Industry dynamism on strategic conformity (-)	No
Moderator	H3e	Industry dynamism on organizational innovation (+)	No

* NPI= New Product Introduction

5.3 Robustness Check - Alternative Operationalization of Strategic Change and Strategic Conformity

As a robustness check, I considered a slightly different operationalization of strategic change and strategic conformity following Haynes and Hillman's (2010) study. Those authors used the same six strategic indicators (i.e., change in advertising intensity (advertising/sales), change in research and development intensity (R&D/sales), change in plant and equipment newness (net P&E/gross P&E), change in non-production overhead (SGA expenses/sales), inventory levels (inventories/sales), and change in financial leverage (debt/equity) as other scholars (Zhang & Rajagopalan, 2003, 2010; Karaevli, 2007; Carpenter, 2000; Finkelstein & Hambrick, 1990). However, Haynes and Hillman (2010) use a five-year window in calculating the resource allocation figures. Accordingly, with $t=2017$, I took the actual resource allocation values for each year and each firm and calculated the baseline strategic change for each firm, for $t-4$ through t . Haynes and Hillman (2010) argue that such a time window would provide CEOs a broad enough time to capture strategic change yet narrow enough to exclude changes in the external environment that we would not be able to incorporate into the study (p. 1154). Similar to the data analysis for hypotheses (H1, H2, H1A, H2A, H1B, H2B, H1C, H2C, H1D), I used the STATA command `xtgls` and ran the GLS regression models to test my panel data (`xtgls`, Stata 16). In all models, I lagged the independent and control variables by one year. In addition, since my dependent variables (strategic change, strategic conformity) are autocorrelated within the panel, I corrected for panel-specific autocorrelation using the option of `corr(psara)`, where `psar1` stands for panel-specific auto-correlation coefficient: AR (1) (Zhang & Rajagapolan, 2009).

5.3.1 Main Effects- The Effect of Female CEOs on Strategic Change and Strategic Conformity

In this section, I present the main effect results on the relationship between female CEOs and strategic change and strategic conformity. I also present the results of the moderating effects for both strategic change and strategic conformity outcome variables.

The results of the main effects are presented in Table 24 below. Specifically, as shown in Model 1, the coefficient for female CEOs predicting strategic change (full) is statistically significant ($B=0.27, p < .01$). In addition, as shown in Model 2, the coefficient for female CEO predicting strategic change (reduced) is statistically significant ($B=0.27, p < .01$).

As reported in Model 3, the coefficient for female CEO predicting strategic conformity (full) is not statistically significant ($B=-0.01, n.s.$). On the other hand, as shown in Model 4, the coefficient for female CEO predicting strategic change (reduced) is statistically significant ($B=-0.01, p < .05$).

Table 24: Female CEOs, Strategic Change and Strategic Conformity ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	0.88 (0.44) **	1.30 (0.45) ***	1.48 (0.00) ***	1.47 (0.02) ***
Inverse Mills ratio	0.04 (0.01) **	0.03 (.02) **	-0.00 (0.00)	-0.00 (0.00) **
Firm Size ¹	-0.05 (0.02) **	-0.05 (0.20) **	0.00 (0.00) *	0.00 (0.00)
CEO Duality	0.39 (.08) ***	0.39 (.08) ***	-0.01 (0.00) ***	-0.02 (0.01) ***
Board Independence	-0.40 (0.43)	-0.41 (0.43)	0.00 (0.00)	-0.01 (0.02)
CEO Output Background ²	-0.16 (0.09)	-0.16 (0.09)	0.01 (0.00)	- 0.00 (0.01)
Prop. of Female Executives	-0.08 (0.12)	-0.08 (0.12)	0.00 (0.00)	0.01 (0.01) **
CEO Tenure	-0.01 (0.01) **	-0.01 (0.01) **	0.00 (0.00) **	0.00 (0.00) ***
Board Size	-0.06 (0.02) ***	-0.06 (0.02) ***	0.00 (0.00) **	0.00 (0.00) ***
Firm Age	0.05 (0.05)	0.05 (0.05)	-0.00 (0.00) **	-0.01 (0.00) **
Unabsorbed Slack Resources	0.04 (0.03)	0.03 (0.03)	0.04 (0.00)	0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	0.27 (0.09) ***	0.27 (0.09) ***	-0.01 (0.00)	-0.01 (0.01) **
Wald Chi-Square	119.91***	108.91***	75.73***	75.73***
N	664	664	654	654

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹ Log of number of employees, ²Coded 0= Output, 1=Throughput, ³French & Fama 49 industry categories.

5.3.2 Executive, Organizational and Industry Moderators

In this section, I present the results of the executive (CEO outsider status, predecessor CEO exit and proportion of female directors), organizational (past firm performance) and industry level (industry dynamism) moderators affecting the relationship between female CEOs and the two outcome variables (i.e., strategic change and strategic conformity).

5.3.3 Executive Level Moderators

In this section, I present the findings for executive (CEO outsider status, predecessor CEO exit and Proportion of female directors) level moderating variables.

5.3.3.1 The moderating effects of CEO outsider status. The results of this moderating variable are presented below in Table 25. As shown in Models 1 and 2, CEO outsider status is a statistically significant moderator of the relationship between female CEO and strategic change-full-($B = -0.68, p < 0.05$) on strategic change-reduced-($B = -0.68, p < 0.05$), respectively. As shown in Models 3 and 4, CEO outsider status is not a statistically significant moderator of the relationship between female CEO and strategic conformity-full-($B = .01, n.s.$) on strategic conformity-reduced-($B = .01, n.s.$), respectively.

Table 25: The Moderating Effects of CEO Outsider ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	0.65 (0.49)	1.07 (0.49) **	1.48 (0.03) ***	1.48 (0.03) ***
Inverse Mills ratio	0.04 (0.02) **	0.03 (0.02) **	-0.00 (0.00) **	-0.00 (0.00) **
Firm Size ¹	-0.05 (0.02) **	-0.05 (0.02) **	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.39 (0.08) ***	0.39 (0.08) ***	-0.02 (0.01) ***	-0.02 (0.01) ***
Board Independence	-0.26 (0.49)	-0.28 (0.49)	-0.01 (0.03)	-0.01 (0.02)
CEO Output Background ²	-0.18 (0.09)	-0.18 (0.09)	-0.00 (0.00)	-0.00 (0.00)
Prop. of Female Executives	-0.16 (0.15)	-0.16 (0.15)	0.00 (0.01) **	0.02 (0.01) **
CEO Tenure	-0.01 (0.01) **	-0.01 (0.01) **	0.00 (0.00) **	0.00 (0.00) **
Unabsorbed Slack Resources	0.04 (0.03)	0.03 (0.03)	0.00 (0.00)	0.00 (0.00)
Board Size	-0.06 (0.02) ***	-0.06 (0.02) ***	0.00 (0.00) ***	0.00 (0.00) ***
Firm Age	0.04 (0.04)	0.04 (0.04)	-0.01 (0.00) **	-0.01 (0.00) **
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	0.46 (0.11) ***	0.47 (0.11) ***	-0.01 (0.01) ***	-0.02 (0.01) ***
CEO Outsider Status	0.13 (0.10)	0.16 (0.10)	-0.00 (0.01)	-0.00 (0.01)
Female CEO X CEO Outsider Status	-0.68 (0.21) ***	-0.68 (0.20) ***	0.01 (0.01)	0.01 (0.01)
Wald Chi-Square	120.97***	118.06 ***	73.78 ***	73.35 ***
N	664	664	654	654

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³French & Fama 49 industry categories

5.3.3.2 The moderating effect of predecessor CEO exit. The results of this moderating variable are presented below in Table 26. As shown in Models 1 and 2, predecessor CEO exit is not a statistically significant moderator of the relationship between female CEOs and strategic change-full-($B = -0.11$, n.s.) and strategic change-reduced-($B = -0.11$, n.s.), respectively. As shown in Models 3 and 4, predecessor CEO exit is not a statistically significant moderator of the relationship between female CEOs and strategic conformity-full-($B = .01$, n.s.) and strategic conformity-reduced-($B = .01$, n.s.), respectively.

Table 26: The Moderating Effects of Predecessor CEO Exit ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	0.93 (0.47) **	1.35 (0.47) **	1.46 (0.03) ***	1.84 (0.00) ***
Inverse Mills ratio	0.04 (0.02) **	0.03 (0.02) **	-0.00 (0.01) **	-0.00 (0.01) **
Firm Size ¹	-0.04 (0.02) *	-0.04 (0.02) *	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.41 (0.08) ***	0.37 (0.08) ***	-0.02 (0.01) ***	-0.02 (0.01) ***
Board Independence	-0.50 (0.47)	-0.51 (0.47)	0.01 (0.02)	-0.01 (0.02)
CEO Output Background ²	-0.15 (0.09) *	-0.15 (0.09)	-0.01 (0.00)	-0.00 (0.00)
Prop. of Female Executives	-0.13 (0.15)	-0.12 (0.16)	0.02 (0.01) **	0.02 (0.01) **
CEO Tenure	-0.02 (0.01) **	-0.01 (0.01) **	0.00 (0.00) ***	0.00 (0.00) **
Unabsorbed Slack Resources	0.03 (0.03)	0.03 (0.03)	0.00 (0.00)	0.00 (0.00)
Board Size	-0.05 (0.02) **	-0.05 (0.02) **	0.00 (0.00) ***	0.00 (0.00) ***
Firm Age	0.04 (0.05)	0.05 (0.05)	-0.01 (0.00) **	-0.01 (0.00) **
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	0.31 (0.11) ***	0.31 (0.11) ***	-0.01 (0.01) ***	-0.01 (0.01) ***
Predecessor CEO exit ⁴	0.08 (0.11)	0.08 (0.11)	-0.01 (0.01)	-0.01 (0.01)
Female CEO X Predecessor CEO exit	-0.11 (0.19)	-0.11 (0.19)	0.01 (0.01)	0.01 (0.01)
Wald Chi-Square	108.65***	106.38***	76.17***	75.94***
N	664	664	654	654

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³French & Fama 49 industry categories, ⁴Coded 0= CEO Voluntary Exit, 1= CEO Dismissal.

5.3.3.3 The moderating effect of the proportion of female directors. The results of this moderating variable are presented below in Table 27. As shown in Models 1 and 2, the proportion of female directors is a statistically significant moderator of the relationship between female CEOs and strategic change-full-($B = -1.67, p < 0.05$) and strategic change-reduced-($B = -1.66, p < 0.05$), respectively.

As shown in Models 3 and 4, proportion of female directors is a statistically significant moderator of the relationship between female CEOs and strategic conformity-full-($B = 0.11, p < 0.05$) and strategic conformity-reduced-($B = 0.11, p < 0.05$), respectively.

Table 27: The Moderating Effects of Proportion of Female Directors ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.08 (0.51) **	1.52 (0.51) ***	1.48 (0.03) ***	1.48 (0.03) ***
Inverse Mills ratio	0.02 (0.02)	0.02 (0.02)	-0.00 (0.00) **	-0.00 (0.00) **
Firm Size ¹	-0.04 (0.02)	-0.04 (0.02)	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.38 (0.08) ***	0.38 (0.08) ***	-0.02 (0.01) ***	-0.02 (0.01) ***
Board Independence	-0.59 (0.45)	-0.60 (0.45)	-0.01 (0.03)	-0.01 (0.03)
CEO Output Background ²	-0.16 (0.09) *	-0.16 (0.09) *	-0.00 (0.00)	-0.00 (0.01)
Prop. of Female Executives	-0.08 (0.14)	-0.07 (0.14)	0.01 (0.01) **	0.01 (0.01) **
CEO Tenure	-0.02 (0.01) ***	-0.02 (0.01) ***	0.00 (0.00) ***	0.00 (0.00) ***
Unabsorbed Slack Resources	0.04 (0.03)	0.04 (0.03)	0.00 (0.00)	0.00 (0.00)
Board Size	-0.02 (0.02) ***	-0.06 (0.02) ***	0.01 (0.00) ***	0.00 (0.00) ***
Firm Age	0.04 (0.05)	0.05 (0.05)	-0.01 (0.00) ***	-0.01 (0.00) ***
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	0.71 (0.24) ***	0.72 (0.24) ***	-0.04 (0.01) ***	-0.04 (0.01) ***
Prop. of Female Directors	0.07 (0.71)	0.01 (0.72)	-0.05 (0.04)	-0.05 (0.04)
Female CEO X Prop. of Female Directors	-1.67 (0.87) **	-1.66 (0.88) **	0.11 (0.05) **	0.11 (0.05) **
Wald Chi-Square	115.18***	113.06***	81.74***	81.47***
N	664	664	654	654

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹ Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories.

5.3.4 The Moderating Effects of Past Firm Performance

The results of this moderating variable are presented below in Table 28. As shown in Models 1 and 2, past firm performance is not a statistically significant moderator of the relationship between female CEOs and strategic change-full-($B = -1.70$, n.s.) and strategic change-reduced-($B = -1.76$, n.s.), respectively.

As shown in Models 3 and 4, past firm performance is a statistically significant moderator of the relationship between female CEOs and strategic conformity-full-($B = .16$, $p < 0.01$) and strategic conformity-reduced-($B = .20$, $p < 0.01$), respectively.

Table 28: The Moderating Effects of Past Firm Performance ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	0.83 (0.46) ***	1.24 (0.46) ***	1.48 (0.03) ***	1.48 (0.03) ***
Inverse Mills ratio	0.04 (0.02) ***	0.04 (0.02) ***	-0.00 (0.00) **	-0.00 (0.00) **
Firm Size ¹	-0.04 (0.02) *	-0.04 (0.02) *	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.41 (0.08) ***	0.41 (0.08) ***	-0.02 (0.00) ***	-0.02 (0.00) ***
Board Independence	-0.43 (0.45)	-0.44 (0.45)	- 0.01 (0.03)	- 0.01 (0.02)
CEO Output Background ²	-0.17 (.09) *	-0.16 (.09)	- 0.01 (0.00) *	- 0.00 (0.00) *
Prop. of Female Executives	-0.11 (0.14)	-0.11 (0.14)	0.02 (0.01) **	0.00 (0.01) **
CEO Tenure	-0.02 (0.01) **	-0.02 (0.01) **	0.00 (0.00) ***	0.00 (0.00) ***
Unabsorbed Slack Resources	0.03 (0.03)	0.03 (0.03)	0.00 (0.00)	0.00 (0.00)
Board Size	-0.06 (0.02) ***	-0.06 (0.02) ***	0.00 (0.00) ***	0.00 (0.00) ***
Firm Age	0.06 (0.05)	-0.06 (0.05)	-0.01 (0.00) **	-0.01 (0.00) **
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	0.39 (0.13) ***	0.39 (0.13) ***	-0.02 (0.01) ***	-0.03 (0.01) ***
Past Firm Performance	1.25 (0.77)	1.32 (0.76)	-0.01 (0.04) *	-0.08 (0.04) **
Female CEO X Past Firm Performance	-1.70 (1.26)	-1.76 (1.25)	0.16 (0.06) ***	0.20 (0.06) ***
Wald Chi-Square	117.48***	115.68***	89.74***	89.82 ***
N	664	664	654	654

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories.

5.3.5 The Moderating Effects of Industry Dynamism

The results of this moderating variable are presented below in Table 29. As shown in Models 1 and 2, industry dynamism is not a statistically significant moderator of the relationship between female CEOs and strategic change-full-($B= 0.01$, n.s.) and strategic change-reduced-($B= 0.01$, n.s.), respectively.

As presented in Models 3 and 4, industry dynamism is not a statistically significant moderator of the relationship between female CEOs and strategic conformity-full-($B= 0.01$, n.s.) and strategic conformity-reduced-($B= 0.01$, n.s.), respectively.

Table 29: The Moderating Effects of Industry Dynamism^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.16 (0.48) **	1.58 (0.48) ***	1.47 (0.03) ***	1.47 (0.03) ***
Inverse Mills ratio	0.04 (0.2) ***	0.04 (0.2) **	-0.00 (0.00) **	-0.00 (0.00) **
Firm Size ¹	-0.05 (0.02) **	-0.05 (0.02) **	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.43 (0.08) ***	0.40 (0.08) ***	-0.02 (0.01) ***	-0.01 (0.02) ***
Board Independence	-0.48 (0.47)	-0.50 (0.48)	-0.01 (0.02)	-0.01 (0.02)
CEO Output Background ²	-0.16 (0.09)	-0.16 (0.09)	- 0.00 (0.00)	- 0.00 (0.00)
Prop. of Female Executives	-0.08 (0.14)	-0.08 (0.14)	0.00 (0.01) **	0.00 (0.01) **
CEO Tenure	-0.02 (0.01) **	-0.02 (0.01) **	0.00 (0.00) ***	0.00 (0.00) ***
Unabsorbed Slack Resources	0.03 (0.03)	0.03 (0.03)	0.00 (0.00)	0.00 (0.00)
Board Size	-0.05 (0.02) **	-0.05 (0.02) **	0.00 (0.00) ***	0.00 (0.00) ***
Firm Age	0.05 (0.05)	0.06 (0.05)	-0.01 (0.00) **	-0.01 (0.00) **
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	0.22 (0.15)	0.24 (0.15)	-0.02 (0.01) **	-0.02 (0.01) **
Industry Dynamism	-0.02 (0.01) **	-0.02 (0.01) **	0.00 (0.00)	0.00 (0.00)
Female CEO X Industry Dynamism	0.01 (0.01)	0.01 (0.01)	0.01 (0.00)	0.01 (0.00)
Wald Chi-Square	121.92 ***	119.95***	80.29 ***	80.06 ***
N	664	664	654	654

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³French & Fama 49 industry categories.

Table 30: Summary of Robustness Check Analysis Results

Effects	Relationships	Significant?
Main Effect	Female CEOs and strategic change	Yes
Main Effect	Female CEOs and strategic conformity	Yes
Moderator	Proportion of female directors on strategic change	Yes
Moderator	Proportion of female directors on strategic conformity	Yes
Moderator	Predecessor CEO exit (voluntary vs. dismissal departure) on strategic change	No
Moderator	Predecessor CEO exit (voluntary vs dismissal departure) on strategic conformity	No
Moderator	CEO outsider status on strategic change	Yes
Moderator	CEO outsider status on strategic conformity	No
Moderator	Past firm performance and strategic change	No
Moderator	Past firm performance on strategic conformity	Yes
Moderator	Industry dynamism on strategic change	No
Moderator	Industry dynamism on strategic conformity	No

5.4 Robustness Check: An Alternative Endogeneity Correction (Residuals)

Because I included the entire population of firms in the S&P 1500 index and used a propensity score matching technique in generating the analysis sample, it is less likely that sample-induced endogeneity is a concern in my analysis. However, endogeneity may arise due to omitted variables that are correlated with both the predictor (i.e., presence of female CEOs) and error terms. Thus, to mitigate the potential endogenous relationship between presence of female CEOs and error terms, I employed a two-stage probit model (Koch-Bayram & Wernicke, 2018; Lin, Officer, Ma, & Zou, 2011).

In the first stage, I estimated the likelihood of a female CEO presence (1=yes, 0=no) using a probit model on the full sample, which consisted of firms that both did and did not have a female CEO during the study period (N = 665)

Specifically, I identified industry political leaning, degree of female labor participation at the industry level, and percentage of female legislators where the firm headquarters reside as relevant exogenous covariates that are likely to predict the presence of female CEOs but are not necessarily associated with the dependent variables. The percentage of female legislators where the firm headquarters reside is a possible indicator of the level of relative gender equality and has been shown to predict the presence of greater gender diversity in leadership roles (Sugarman & Straus, 1988). In addition, I included the proportion of industry female labor participation (4 digit SIC), as it has been shown to be closely linked to the likelihood of female leadership appointment (Hillman et al., 2007).

Finally, research suggests that an Industry's dominant political ideology (liberal vs. conservative) can be an important predictor of corporate gender diversity. Liberal-leaning

industries are more likely to have greater levels of female leadership in top positions (Terjesen, Aguilera, & Lorenz, 2015). Data on industry political leaning were collected from the Center for Responsive Politics (<https://www.opensecrets.org/>). Data on female labor force participation rate were obtained from The U.S. Bureau of Labor Statistics. The National Conference of State Legislatures (NCSL) website (<http://www.ncsl.org/>) was used to collect data on the percentage of female legislators. Additionally, board diversity, firm age, and firm size were also included in the first stage probit model. The result of the stage 1 probit model is included in the Appendix. Of all these instrumental variables, female legislators, firm size, and board diversity significantly predicted the female CEO presence. Following past research (Koch-Bayram & Wernicke, 2018; Lin, Officer, Ma, & Zou, 2011), I regressed female CEO dummy variable on the above covariates. In the second stage, I used the residuals from the first-stage model as a revised female CEO presence measure.

5.4.1 Main Effects: The Effect of Female CEOs on Strategic Change, Strategic Conformity, and Organizational Innovation

In this section, I present the main effect results on the relationship between female CEOs and strategic change, strategic conformity and organizational innovation. I also present the results of the moderating effects for all three outcome variables: strategic change, strategic conformity, and organizational innovation.

The results of the main effects are presented in Table 31 below. Specifically, as shown in Model 1, the coefficient for female CEOs predicting strategic change (full) is not statistically significant ($B = -0.01$, n.s.). In addition, as shown in Model 2, the coefficient for female CEO predicting strategic change (reduced) is not statistically significant ($B = -0.01$, n.s.).

As reported in Model 3, the coefficient for female CEO predicting strategic conformity (full) is not statistically significant ($B = -0.00$, n.s.). On the other hand, as shown in Model 4, the coefficient for female CEO predicting strategic conformity (reduced) is not statistically significant ($B = -0.01$, n.s.).

The main effect results on the relationship between female CEOs and organizational innovation is presented below in Table 32. As shown in Model 1, the coefficient for female CEOs predicting organizational innovation (New Product Introductions-NPIs) is statistically significant ($B = 0.10$, $p < 0.01$). In addition, as shown in Model 2, the coefficient for female CEO predicting organizational innovation (Research & Development Intensity) is also statistically significant ($B = -0.01$, $p < 0.01$).

Table 31: Female CEOs, Strategic Change and Strategic Conformity

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full) ⁴	Model 2 (Reduced) ⁵	Model 3 (Full)	Model 4 (Reduced)
Constant	1.30 (0.49) ***	1.68 (0.49) ***	1.49 (0.04) ***	1.85 (0.00) ***
Firm Size ¹	-0.05 (0.20) ***	-0.05 (0.02) ***	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.32 (.08) ***	0.32 (.08) ***	-0.02 (0.01) *	-0.00 (0.00) ***
Board Independence	-0.11 (0.43)	-0.10 (0.43)	0.03 (0.02)	0.01 (0.00)
CEO Output Background ²	-0.04 (0.09)	-0.04 (0.08)	0.01 (0.01) *	0.01 (0.00)
Prop. of Female Executives	-0.01 (0.09)	-0.01 (0.09)	0.00 (0.01)	0.01 (0.00)
CEO Tenure	- 0.01 (0.01) **	- 0.01 (0.01) **	-0.01 (0.01)	0.00 (0.00) **
Unabsorbed Slack Resources	0.03 (0.03)	0.04 (0.03)	- 0.00 (0.00)	- 0.00 (0.00)
Board Size	-0.02 (0.02)	-0.02 (0.02)	0.01(0.00) ***	0.00 (0.00)
Firm Age	0.07 (0.04) *	0.08 (0.04) *	-0.01 (0.01) **	- 0.00 (0.00) *
Industry Fixed Effect ³	Included	Included	Included	Included
Year Fixed Effect	Included	Included	Included	Included
Female CEO (residuals)	-0.01 (0.02)	-0.01 (0.02)	-0.00 (0.00)	-0.01 (0.00)
Wald Chi-Square	73.06***	72.36***	38.67***	67.25***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, Standard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³French & Fama 49 industry categories. ⁴Full model (consist of six strategic indicators: advertising intensity, R&D intensity, P&E newness, non-production overhead, inventory levels, financial leverage). ⁵Reduced model (consist of four strategic indicators: P&E newness, non-production overhead, inventory levels, financial leverage).

Table 32: The Effect of Female CEOs on Organizational Innovation

Variables	Organizational Innovation	
	New Product Introductions (NPIs) ^a	Research & Development (R & D) Intensity ^b
	Model 1	Model 2
Constant	1.80 (0.74) **	-0.01 (0.05) *
Firm Size ¹	-0.02 (0.03)	0.00 (0.00)
CEO Duality	-0.03 (0.13)	-0.02 (0.01) *
Board Independence	-1.07 (0.62) *	-0.00 (0.04)
CEO Output Background ²	0.38 (0.14) ***	-0.01 (0.01)
Prop. of Female Executives	-0.08 (0.10)	-0.01 (0.00)
CEO Tenure	-0.02 (0.01) **	-0.00 (0.00)
Board Size	0.01 (0.03)	0.01 (0.00) *
Firm Age	-0.06 (0.07)	-0.00 (0.00)
Unabsorbed Slack Resources	-0.00 (0.05)	0.02 (0.00) ***
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO (Residuals)	0.10 (0.03) ***	-0.01 (0.00) ***
Wald Chi-Square	57.89 ***	84.83***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories. ^a Panel Negative Binomial regression, ^b Generalized Least Squares.

5.4.2 Executive, Organizational and Industry Moderators

In this section, I present the results of the executive (CEO outsider status, predecessor CEO exit and proportion of female directors), organizational (past firm performance) and industry level (industry dynamism) moderators affecting the relationship between female CEOs and the outcome variables (i.e., strategic change, strategic conformity and organizational innovation).

5.4.3 Executive Level Moderators

In this section, I present the findings for executive (CEO outsider status, predecessor CEO exit and proportion of female directors) level moderating variables.

5.4.3.1 The moderating effects of CEO outsider status. The results of this moderating variable are presented below in Table 33. As shown in Models 1 and 2, CEO outsider status is not a statistically significant moderator of the relationship between female CEO and strategic change-full-($B = -0.17$, n.s.) and strategic change-reduced-($B = -0.17$, n.s.), respectively.

As shown in Models 3 and 4, CEO outsider status is not a statistically significant moderator of the relationship between female CEO and strategic conformity-full-($B = .01$, n.s.) and strategic conformity-reduced-($B = .00$, n.s.), respectively.

In addition, the results of this moderating variable on the relationship between female CEOs and organizational innovation are presented in Table 34 below. As shown in Models 1 and 2, CEO outsider status is not a statistically significant moderator of the relationship between female CEO and new product introduction ($B = 0.14$, n.s.) and Research & Development (R & D) Intensity ($B = 0.01$, n.s.), respectively.

Table 33: The Moderating Effect of CEO Outsider Status^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.33 (0.52) **	1.71 (0.52) ***	1.48 (0.06) ***	1.85 (0.00) ***
Firm Size ¹	-0.06 (0.02) ***	-0.06 (0.02) ***	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.29 (0.08) ***	0.29 (0.08) ***	-0.03 (0.01) ***	-0.00 (0.00) ***
Board Independence	-0.09 (0.46)	-0.08 (0.46)	0.06 (0.05)	0.00 (0.00)
CEO Output Background ²	-0.01 (0.09)	-0.01 (0.09)	0.01 (0.01)	0.00 (0.00)
Prop. of Female Executives	-0.00 (0.11)	0.00 (0.11)	-0.00 (0.01)	0.00 (0.00)
CEO Tenure	-0.01 (0.01) **	-0.01 (0.01) **	0.00 (0.00) *	0.00 (0.00) **
Unabsorbed Slack Resources	0.05 (0.03)	0.05 (0.03)	-0.00 (0.00)	-0.00 (0.00)
Board Size	-0.02 (0.02)	-0.02 (0.02)	0.00 (0.00)	0.00 (0.00)
Firm Age	0.07 (0.04)	0.07 (0.04)	-0.00 (0.00)	-0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO (residuals)	0.03 (0.02)	0.03 (0.02)	-0.00 (0.00)	-0.65 (0.00)
CEO Outsider Status	-0.32 (0.13) **	-0.32 (0.13) **	0.02 (0.01)	0.00 (0.00)
Female CEO X CEO Outsider Status	-0.17 (0.05)	-0.17 (0.05)	0.01 (0.01)	0.00 (0.00)
Wald Chi-Square	80.31***	79.70***	37.59***	59.01***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, ^aStandard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories.

Table 34: The Moderating Effects of CEO Outsider Status on Organizational Innovation

Variables	Organizational Innovation	
	New Product Introduction ^a	Research & Development (R & D) Intensity ^b
	Model 1	Model 2
Constant	2.02 (0.75) **	-0.01 (0.04)
Firm Size ¹	-0.02 (0.03)	0.00 (0.00)
CEO Duality	0.00 (0.13)	-0.01 (0.01) *
Board Independence	-1.15 (0.62) *	-0.00 (0.04)
CEO Output Background ²	0.44 (0.14) ***	-0.00 (0.01)
Prop. of Female Executives	-0.06 (0.09)	-0.01 (0.01)
CEO Tenure	-0.03 (0.01) ***	-0.00 (0.00)
Board Size	0.01 (0.03)	0.00 (0.00) *
Firm Age	-0.06 (0.07)	-0.00 (0.00)
Unabsorbed Slack Resources	-0.00 (0.05) **	0.02 (0.00) ***
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO (residuals)	0.06 (0.03) *	-0.01 (0.00) ***
CEO Outsider Status	-0.04 (0.17)	-0.01 (0.01)
Female CEO X CEO Outsider Status	0.14 (0.07)	0.00 (0.00)
Wald Chi-Square	72.01 ***	80.47 ***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, ¹ Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories. ^a Panel Negative Binomial regression, ^b Generalized Least Squares.

5.4.3.2 The moderating effect of predecessor CEO exit. The results of this moderating variable are presented below in Table 35. As shown in Models 1 and 2, predecessor CEO exit is not a statistically significant moderator of the relationship between female CEOs and strategic change-full-($B = -0.02$, n.s.) and strategic change-reduced-($B = -0.02$, n.s.), respectively.

As shown in Models 3 and 4, predecessor CEO exit is not a statistically significant moderator of the relationship between female CEOs and strategic conformity-full-($B = 0.01$, n.s.) and strategic conformity-reduced-($B = 0.01$, n.s.), respectively.

In addition, the results of this moderating variable on the relationship between female CEOs and organizational innovation are presented in Table 36 below. As shown in Models 1 and 2, predecessor CEO exit is not a statistically significant moderator of the relationship between female CEO and new product introduction ($B = 0.06$, n.s.) and Research & Development (R & D) Intensity ($B = -0.00$, n.s.), respectively.

Table 35: The Moderating Effect of Predecessor CEO Exit Type ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.31 (0.51) **	1.69 (0.51) ***	1.48 (0.06) ***	1.85 (0.00) ***
Firm Size ¹	-0.05 (0.02) **	-0.05 (0.02) **	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.31 (0.08) ***	0.31 (0.08) ***	-0.04 (0.01) ***	-0.00 (0.00) ***
Board Independence	-0.17 (0.46)	-0.17 (0.46)	0.06 (0.05)	0.01 (0.00)
CEO Output Background ²	-0.02 (0.09)	-0.03 (0.09)	0.01 (0.01)	0.00 (0.00)
Prop. of Female Executives	-0.00 (0.10)	-0.02 (0.09)	0.00 (0.01)	0.00 (0.00)
CEO Tenure	-0.01 (0.01) **	-0.01 (0.01) **	0.00 (0.00) *	0.00 (0.00) **
Unabsorbed Slack Resources	0.04 (0.03)	0.04 (0.03)	-0.00 (0.00)	-0.00 (0.00)
Board Size	-0.02 (0.02)	-0.02 (0.02)	0.00 (0.00)	0.00 (0.00)
Firm Age	0.08 (0.04) *	0.08 (0.04) *	-0.01 (0.00)	-0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO (residuals)	0.00 (0.02)	0.00 (0.02)	-0.00 (0.00)	-0.04 (0.00)
Predecessor CEO exit ⁴	-0.01 (0.11)	-0.01 (0.11)	0.02 (0.01)	0.00 (0.00)
Female CEO X Predecessor CEO exit	-0.02 (0.04)	-0.02 (0.04)	0.01 (0.00)	0.01 (0.00)
Wald Chi-Square	70.03***	69.36***	39.71***	59.65***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories, ⁴ Coded 0= CEO Voluntary Exit, 1= CEO Dismissal

Table 36: The Moderating Effects of Predecessor CEO Exit on Organizational Innovation

Variables	Organizational Innovation	
	New Product Introduction ^a	Research & Development (R & D) Intensity ^b
	Model 1	Model 2
Constant	1.74 (0.74) **	-0.11 (0.05) **
Firm Size ¹	-0.02 (0.03)	0.00 (0.00)
CEO Duality	-0.03 (0.13)	-0.02 (0.01) *
Board Independence	-0.99 (0.60)	0.00 (0.04)
CEO Output Background ²	0.39 (0.14) ***	-0.00 (0.01)
Prop. of Female Executives	-0.08 (0.10)	-0.01 (0.01)
CEO Tenure	-0.02 (0.01) **	-0.00 (0.00)
Board Size	0.01 (0.03)	0.01 (0.00) **
Firm Age	-0.06 (0.07)	-0.00 (0.00)
Unabsorbed Slack Resources	-0.01 (0.05)	0.02 (0.00) ***
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO (residuals)	0.07 (0.04) **	-0.01 (0.01) ***
Predecessor CEO Exit	0.04 (0.15)	-0.00 (0.01)
Female CEO X Predecessor CEO Exit	0.06 (0.06)	-0.00 (0.00)
Wald Chi-Square	59.62 ***	79.78 ***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, ¹ Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories. ^a Panel Negative Binomial regression, ^b Generalized Least Squares.

5.4.3.3 The moderating effect of the proportion of female directors. The results of this moderating variable are presented below in Table 37. As shown in Models 1 and 2, the proportion of female directors is not a statistically significant moderator of the relationship between female CEOs and strategic change-full-($B = -0.12$, n.s.) and strategic change-reduced-($B = -0.47$, n.s.), respectively.

As shown in Models 3 and 4, the proportion of female directors is not a statistically significant moderator of the relationship between female CEOs and strategic conformity-full-($B = 0.03$, n.s.) and strategic conformity-reduced-($B = 0.01$, n.s.), respectively.

In addition, the results of this moderating variable on the relationship between female CEOs and organizational innovation are presented in Table 38 below. As shown in Models 1 and 2, the proportion of female directors is a statistically significant moderator of the relationship between female CEO and new product introduction ($B = 0.35$, $p < 0.01$) and Research & Development (R & D) Intensity ($B = 0.05$, $p < 0.01$), respectively.

Table 37: The Proportion of Female Directors as a Moderator ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	0.22 (0.82) **	0.16 (0.82) **	1.65 (0.09) ***	1.85 (0.01) ***
Firm Size ¹	-0.05 (0.02) **	-0.05 (0.02) **	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.30 (0.08) ***	0.30 (0.08) ***	-0.03 (0.01) ***	-0.00 (0.00) ***
Board Independence	-0.26 (0.46)	-0.26 (0.46)	0.07 (0.05)	0.01 (0.00)
CEO Output Background ²	-0.07 (0.09)	-0.07 (0.09)	0.01 (0.01)	0.00 (0.00)
Prop. of Female Executives	-0.01 (0.11)	-0.00 (0.11)	-0.00 (0.01)	0.00 (0.00)
CEO Tenure	-0.01 (0.01) *	-0.01 (0.01) *	0.00 (0.00)	0.00 (0.00) *
Unabsorbed Slack Resources	0.04 (0.03)	0.04 (0.03)	-0.00 (0.00)	-0.00 (0.00)
Board Size	-0.01 (0.02)	-0.00 (0.02)	0.00 (0.00)	0.00 (0.00)
Firm Age	0.06 (0.04)	0.06 (0.04)	-0.00 (0.00)	-0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO (residuals)	-0.24 (0.23) **	0.35 (0.23)	0.02 (0.01) *	0.00 (0.00)
Prop. of Female Directors	5.07 (1.03) **	-0.16 (0.71)	-0.54 (0.22) **	-0.02 (0.02)
Female CEO X Prop. of Female Directors	-0.12 (0.12)	-0.47 (0.88)	0.03 (0.01)	0.01 (0.00)
Wald Chi-Square	81.71***	80.85***	49.69***	70.62***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, ^aStandard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³French & Fama 49 industry categories.

Table 38: The Moderating Effect of The Proportion of Female Directors

Variables	Organizational Innovation	
	New Product Introductions ^a	Research & Development (R & D) Intensity ^b
	Model 1	Model 2
Constant	0.17 (0.76) **	-0.06 (0.08) **
Firm Size ¹	-0.01 (0.03)	0.00 (0.00)
CEO Duality	-0.02 (0.13)	-0.02 (0.01) *
Board Independence	-0.68 (0.57)	0.02 (0.04)
CEO Output Background ²	0.37 (0.14) ***	-0.00 (0.01)
Prop. of Female Executives	-0.08 (0.09)	-0.01 (0.01)
CEO Tenure	-0.02 (0.01) **	-0.00 (0.00)
Board Size	0.03 (0.03)	0.01 (0.00) *
Firm Age	-0.06 (0.07)	-0.01 (0.00)
Unabsorbed Slack Resources	-0.00 (0.05)	0.02 (0.00) ***
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO (Residuals)	-0.13 (0.16)	-0.02 (0.01) *
Prop. of Female Directors	3.44 (1.17)	0.11 (0.19)
Female CEO X Prop. of Female Directors	0.35 (0.14) ***	0.04 (0.01) ***
Wald Chi-Square	73.64 ***	88.36s***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories. ^a Panel Negative Binomial Regression, ^b Generalized Least Squares.

5.4.4 The Moderating Effects of Past Firm Performance

The results of this moderating variable are presented below in Table 39. As shown in Models 1 and 2, past firm performance is not a statistically significant moderator of the relationship between female CEOs and strategic change-full-($B = -0.27$, n.s.) and strategic change-reduced-($B = -0.27$, n.s.), respectively.

As shown in Models 3 and 4, past firm performance is not a statistically significant moderator of the relationship between female CEOs and strategic conformity-full-($B = 0.10$, n.s.) and strategic conformity-reduced-($B = 0.00$, n.s.), respectively.

In addition, the results of this moderating variable on the relationship between female CEOs and organizational innovation are presented in Table 40 below. As shown in Models 1 and 2, past firm performance is not a statistically significant moderator of the relationship between female CEO and new product introduction ($B = 0.76$, n.s.) and Research & Development (R & D) Intensity ($B = -0.02$, n.s.), respectively.

Table 39: The Moderating Effect of Past Firm Performance ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.17 (0.51) **	1.64 (0.51) ***	1.50 (0.06) ***	1.85 (0.00) ***
Firm Size ¹	-0.06 (0.02) ***	-0.06 (0.02) ***	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.30 (0.08) ***	0.30 (0.08) ***	-0.04 (0.01) ***	-0.01 (0.00) ***
Board Independence	-0.09 (0.45)	-0.09 (0.45)	0.06 (0.05)	0.00 (0.00)
CEO Output Background ²	-0.04 (.09)	-0.04 (.09)	0.01 (0.01)	0.01 (0.00)
Prop. of Female Executives	-0.01 (0.09)	-0.01 (0.10)	-0.00 (0.01)	0.01 (0.00)
CEO Tenure	-0.01 (0.01) **	-0.01 (0.01) **	0.00 (0.00) *	0.01 (0.00) **
Unabsorbed Slack Resources	0.04 (0.03)	0.04 (0.03)	-0.00 (0.00)	-0.00 (0.00)
Board Size	-0.02 (0.02)	-0.02 (0.02)	0.00 (0.00)	0.00 (0.00)
Firm Age	0.08 (0.04) *	0.08 (0.04) *	-0.01 (0.00)	-0.00 (0.00) *
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO (Residuals)	0.01 (0.02)	0.01 (0.02)	0.00 (0.01)	0.01 (0.00)
Past Firm Performance	0.20 (0.80)	0.24 (0.80)	-0.08 (0.03)	-0.00 (0.00)
Female CEO X Past Firm Performance	-0.27 (0.28)	-0.27 (0.27)	0.10 (0.12)	0.00 (0.00)
Wald Chi-Square	72.33***	71.68***	38.67 ***	63.59 ***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories.

Table 40: The Moderating Effects of Past Firm Performance on Organizational Innovation

Variables	Organizational Innovation	
	New Product Introduction (NPI) ^a	Research & Development (R & D) Intensity ^b
	Model 1	Model 2
Constant	1.60 (0.74) **	0.01 (0.05) **
Firm Size ¹	-0.01 (0.03)	0.00 (0.00)
CEO Duality	-0.03 (0.13)	-0.02 (0.01) *
Board Independence	-1.01 (0.61) *	-0.01 (0.04)
CEO Output Background ²	0.32 (0.14) **	-0.00 (0.01)
Prop. of Female Executives	-0.13 (0.15)	-0.01 (0.01)
CEO Tenure	-0.02 (0.01) **	-0.00 (0.00)
Board Size	0.02 (0.03)	0.00 (0.00) **
Firm Age	-0.09 (0.07)	-0.01 (0.00)
Unabsorbed Slack Resources	-0.01 (0.05)	0.02 (0.00) ***
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO (Residuals)	0.05 (0.04)	-0.01 (0.00) **
Past Firm Performance	3.25 (0.93) ***	-0.19 (0.08) **
Female CEO X Past Firm Performance	0.76 (0.34)	-0.02 (0.03)
Wald Chi-Square	70.73 ***	91.09 ***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, 1Log of number of employees, 2 Coded 0= Output, 1=Throughput, 3 French & Fama 49 industry categories. ^a Panel Negative Binomial regression, ^b Generalized Least Squares.

5.4.5 The Moderating Effects of Industry Dynamism

The results of this moderating variable are presented below in Table 41. As shown in Models 1 and 2, industry dynamism is not a statistically significant moderator of the relationship between female CEOs and strategic change-full-($B= 0.00$, n.s.) and strategic change-reduced-($B= 0.00$, n.s.), respectively.

As presented in Models 3 and 4, industry dynamism is not a statistically significant moderator of the relationship between female CEOs and strategic conformity-full-($B= 0.01$, n.s.) and strategic conformity-reduced-($B= 0.01$, n.s.), respectively.

In addition, the results of this moderating variable on the relationship between female CEOs and organizational innovation are presented in Table 42 below. As shown in Models 1 and 2, industry dynamism is not a statistically significant moderator of the relationship between female CEO and new product introduction ($B= -0.01$, n.s.) and Research & Development (R & D) Intensity ($B= -0.00$, n.s.), respectively.

Table 41: The Moderating Effect of Industry Dynamism ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.40 (0.51) ***	1.78 (0.52) ***	1.47 (0.06) ***	1.85 (0.00) ***
Firm Size ¹	-0.06 (0.02) ***	-0.06 (0.02) ***	0.00 (0.00)	0.01 (0.00)
CEO Duality	0.32 (0.08) ***	0.33 (0.08) ***	-0.04 (0.01) ***	-0.00 (0.00) ***
Board Independence	-0.14 (0.44)	-0.13 (0.44)	0.06 (0.05)	0.00 (0.00)
CEO Output Background ²	-0.05 (0.09)	-0.05 (0.09)	0.01 (0.01)	0.00 (0.00)
Prop. of Female Executives	0.02 (0.10)	0.02 (0.10)	-0.00 (0.01)	0.00 (0.00)
CEO Tenure	-0.01 (0.01) **	-0.01 (0.01) **	0.00 (0.00) *	0.00 (0.00) **
Unabsorbed Slack Resources	0.04 (0.03)	0.04 (0.03)	-0.00 (0.00)	-0.00 (0.00)
Board Size	-0.01 (0.02)	-0.01 (0.02)	0.00 (0.00)	0.00 (0.00)
Firm Age	0.08 (0.04) *	0.08 (0.04) *	-0.01 (0.00)	-0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO (Residuals)	-0.01 (0.04)	-0.02 (0.04)	-0.00 (0.01)	-0.00 (0.00)
Industry Dynamism	-0.02 (0.01) *	-0.02 (0.01) *	0.00 (0.00)	0.00 (0.00) *
Female CEO X Industry Dynamism	0.00 (0.00)	0.00 (0.00)	0.01 (0.00)	0.01 (0.00)
Wald Chi-Square	82.03 ***	81.29***	37.18 ***	67.32 ***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ² Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories.

Table 42: The Moderating Effects of Industry Dynamism on Organizational Innovation

	Organizational Innovation	
	New Product Introduction (NPI) ^a	Research & Development (R & D) Intensity ^b
Variables	Model 1	Model 2
Constant	1.70 (0.75) **	0.10 (0.05) **
Firm Size ¹	-0.02 (0.03)	0.00 (0.00)
CEO Duality	-0.02 (0.13)	-0.01 (0.01) **
Board Independence	-1.08 (0.62) *	-0.00 (0.04)
CEO Output Background ²	0.41 (0.14) ***	-0.00 (0.01)
Prop. of Female Executives	-0.10 (0.12)	-0.02 (0.01)
CEO Tenure	-0.02 (0.01) **	-0.00 (0.00)
Board Size	0.01 (0.03)	0.00 (0.00) *
Firm Age	-0.07 (0.07)	-0.00 (0.00)
Unabsorbed Slack	-0.01 (0.05)	0.02 (0.00) ***
Resources		
Industry Fixed Effects ³	Included	Included
Year Fixed Effects	Included	Included
Female CEO (Residuals)	0.08 (0.04) *	0.00 (0.00)
Industry Dynamism	0.01 (0.01)	-0.00 (0.00) ***
Female CEO X Industry Dynamism	-0.01 (0.01)	-0.00 (0.00)
Wald Chi-Square	62.72 ***	94.35***
N	664	664

*p < 0.10, **p < 0.05, ***p < 0.01, Robust standard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput,³French & Fama 49 industry categories. ^a Panel Negative Binomial regression, ^b Generalized Least Squares.

Table 43: Summary of Robustness Check Analysis Results: An Alternative Endogeneity Correction

Effect	H	Relationships	Significant?
Main Effect	H1	Female CEOs and strategic change (-)	No
Main Effect	H2	Female CEOs and strategic conformity (-)	No
Main Effect	H3	Female CEOs and organizational innovation (+)	Yes
Moderator	H1a	Proportion of female directors on strategic change (+)	No
Moderator	H2a	Proportion of female directors on strategic conformity (-)	No
Moderator	H3a	Proportion of female directors on strategic conformity (+)	Yes
Moderator	H1b	Predecessor CEO exit (dismissal departure) on strategic change (+)	No
Moderator	H2b	Predecessor CEO exit (dismissal departure) on strategic conformity (-)	No
Moderator	H3b	Predecessor CEO exit (dismissal departure) on organizational innovation (+)	No
Moderator	H1c	CEO outsider status on strategic change (+)	No
Moderator	H2c	CEO outsider status on strategic conformity (-)	No
Moderator	H3c	CEO outsider status on organizational innovation (-)	No
Moderator	H1d	Past firm performance and strategic change (-)	No
Moderator	H2d	Past firm performance on strategic conformity (+)	No
Moderator	H3d	Past firm performance on organizational innovation (-)	No
Moderator	H1e	Industry dynamism on strategic change (+)	No
Moderator	H2e	Industry dynamism on strategic conformity (-)	No
Moderator	H3e	Industry dynamism on organizational innovation (+)	

5.5 Supplementary Analyses – Exploring Board Independence and CEO Tenure Contingencies on Strategic Change and Strategic Conformity

In addition to the hypotheses proposed in this study, I explore the potential effects of board independence and CEO tenure as moderators on strategic change and strategic conformity (using both full and reduced models). Research has explored the governance antecedents of strategic choices (e.g., Westphal & Fredrickson, 2001; Westphal & Bednar, 2005; Brunninge, Nordqvist, & Wiklund, 2007). However, the effects of board independence (or outside director presence) on strategic change and strategic conformity are limited. For example, Brunninge, Nordqvist, and Wiklund (2007) found that board independence is positively related to the strategic change efforts in small and medium-sized enterprises (SMEs). However, understanding the moderating effect of board independence on the relationship between female CEO presence and strategic change and strategic conformity is absent in the management literature. Hence, to explore this relationship, I conducted GLS regression analyses (using the STATA command `xtgls`) to test the moderating variable of board independence on the relationship between female CEO presence and strategic change and strategic conformity.

CEO tenure has been widely explored in various contexts, including seasons of a CEO's tenure (Hambrick & Fukutomi, 1991), organization and environment fit (Miller, 1991), company performance (Henderson et al., 2006), organizational outcomes (Finkelstein & Hambrick, 1990), company invention (Wu et al., 2005; Chen, 2013), and strategic change (Weng & Lin, 2014). However, management literature has a limited understanding of the moderating effect of CEO tenure on the relationship between female CEO presence and strategic change and strategic conformity. Thus, to bridge this gap, I conducted a GLS regression analyses (using the STATA command `xtgls`) to test the moderating effect of CEO tenure on the relationship between female

CEO presence and strategic change and strategic conformity. Hence, in the following section, I present the results of the supplemental analysis of board independence and CEO tenure variables on strategic change and strategic conformity.

5.5.1 The Effect of Board Independence

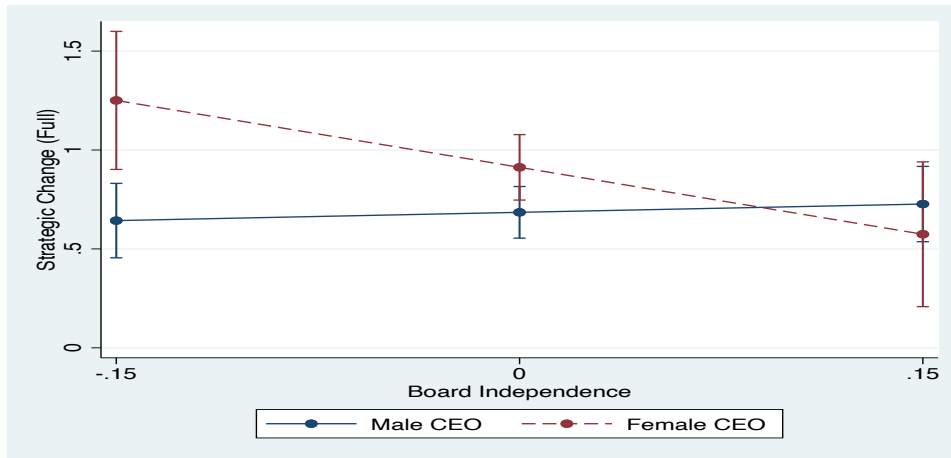
The results of this moderating variable are presented below in Table 31. As shown in Models 1 and 2 (strategic change), board independence is a statistically significant moderator of the relationship between female CEOs and strategic change-full-($B = -2.13, p < 0.05$) and strategic change-reduced-($B = -2.16, p < 0.05$), respectively. In addition, as shown in Models 3 and 4 (strategic conformity), board independence is a statistically significant moderator of the relationship between female CEOs and strategic conformity-full-($B = 0.46, p < 0.01$) and strategic conformity-reduced-($B = 0.05, p < 0.01$), respectively. In addition, the interaction plot of female CEOs and board independence on strategic change and strategic conformity are presented in Figures 8 and 9, respectively.

Table 44: The Moderating Effects of Board Independence ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	0.94 (0.47) **	1.33 (0.48) ***	1.58 (0.05) ***	1.85 (0.00) ***
Inverse Mills ratio	0.00 (0.1)	0.00 (0.1)	-0.00 (0.00)	0.00 (0.00)
Firm Size ¹	-0.05 (0.02) ***	-0.05 (0.02) ***	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.29 (0.07) ***	0.30 (0.08) ***	-0.04 (0.01) ***	-0.00 (0.00) ***
CEO Output Background ²	-0.05 (0.08)	-0.06 (0.09)	0.01 (0.01)	0.00 (0.00)
Prop. of Female Executives	-0.09 (0.12)	-0.09 (0.12)	0.00 (0.01)	0.00 (0.00)
CEO Tenure	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Unabsorbed Slack Resources	0.00 (0.02)	0.01 (0.03)	0.00 (0.00)	0.00 (0.00)
Board Size	-0.01 (0.02)	-0.01 (0.02)	-0.00 (0.00)	1.14 (0.00)
Firm Age	0.04 (0.04)	0.04 (0.05)	-0.00 (0.00)	-0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	2.40 (1.01) **	2.42 (1.02) **	-0.44 (0.11) ***	-0.04 (0.01) ***
Board Independence	0.27 (0.48)	0.28 (0.48)	-0.04 (0.05)	-0.00 (0.00)
Female CEO X Board Independence	-2.13 (1.16) **	-2.16 (1.17) **	0.46 (0.13) ***	0.05 (0.01) ***
Wald Chi-Square	76.82 ***	74.67***	76.43 ***	69.39 ***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories.

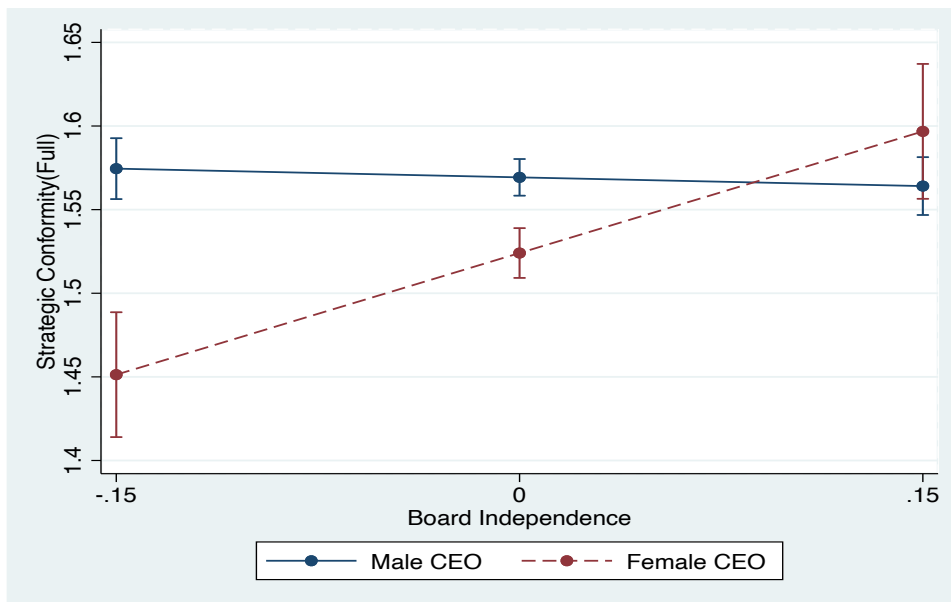
Figure 8: The Effects of Female CEO and Board Independence on Strategic Change ^{a b}



^a Board Independence (at -1 and +1 s.d.)

^b Full composite model of strategic change is used.

Figure 9: The Effects of Female CEO and Board Independence on Strategic Conformity ^{a b}



^a Board Independence (at -1 and +1 s.d.)

^b Full composite model of strategic conformity is used.

5.5.2 Female CEO and CEO Tenure

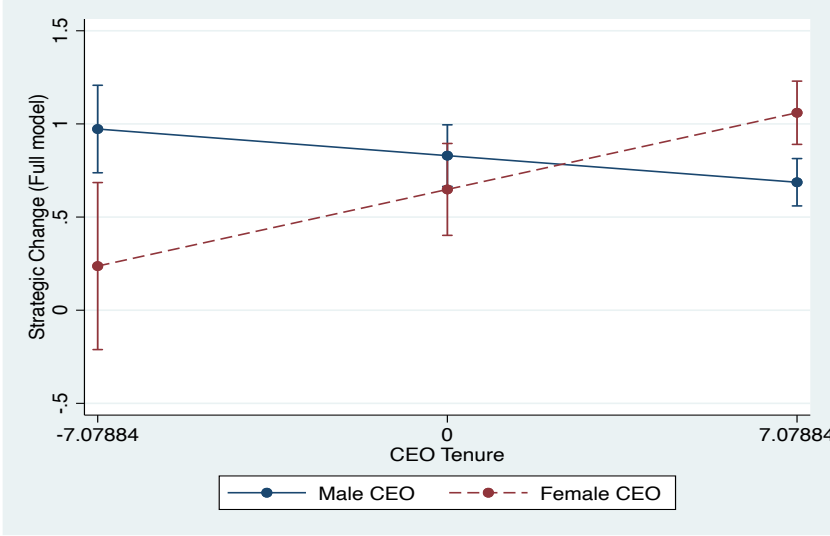
The results of this moderating variable are presented below in Table 32. As shown in Models 1 and 2 (strategic change), CEO tenure is a statistically significant moderator of the relationship between female CEOs and strategic change-full-($B= 0.08$, $p<0.01$) and strategic change-reduced-($B= 0.08$, $p< 0.01$), respectively. In addition, as shown in Models 3 and 4 (strategic conformity), CEO tenure is a statistically significant moderator of the relationship between female CEOs and strategic conformity-full-($B= -0.02$, $p<0.01$) and strategic conformity - reduced-($B= -0.01$, $p< 0.01$), respectively. In addition, the interaction plot of female CEOs and CEO tenure on strategic change and strategic conformity is presented in Figure 10 and 11, respectively.

Table 45: The Moderating Effects of Board Independence ^a

Variables	Strategic Change		Strategic Conformity	
	Model 1 (Full)	Model 2 (Reduced)	Model 3 (Full)	Model 4 (Reduced)
Constant	1.25 (0.45) ***	1.65 (0.46) ***	1.51 (0.05) ***	1.85 (0.00) ***
Inverse Mills ratio	-0.01 (0.1)	-0.01 (0.1)	0.00 (0.00)	0.00 (0.00)
Firm Size ¹	-0.05 (0.02) ***	-0.05 (0.02) **	0.00 (0.00)	0.00 (0.00)
CEO Duality	0.34 (0.08) ***	0.34 (0.08) ***	-0.04 (0.01) ***	-0.00 (0.00) ***
Board Independence	0.04 (0.45)	0.05 (0.45)	0.06 (0.05)	0.00 (0.00)
CEO Output Background ²	-0.05 (0.09)	-0.05 (0.09)	0.01 (0.01)	0.00 (0.00)
Prop. of Female Executives	-0.08 (0.11)	-0.07 (0.11)	0.00 (0.01)	0.00 (0.00)
Unabsorbed Slack	0.02 (0.03)	0.02 (0.03)	- 0.00 (0.00)	-0.00 (0.00)
Resources				
Board Size	-0.01 (0.02)	-0.00 (0.02)	0.00 (0.00)	0.00 (0.00)
Firm Age	0.05 (0.04)	0.05 (0.04)	-0.00 (0.00)	-0.00 (0.00)
Industry Fixed Effects ³	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
Female CEO	-0.18 (0.14)	-0.18 (0.14)	-0.06 (0.01) ***	-0.00 (0.00) ***
CEO Tenure	-0.02 (0.01) ***	-0.02 (0.00) ***	0.00 (0.11) *	0.00 (0.00) ***
Female CEO X CEO Tenure	0.08 (0.02) ***	0.08 (0.02) ***	- 0.02 (0.00) ***	-0.01 (0.00) ***
Wald Chi-Square	105.44 ***	104.66 ***	79.88***	105.53 ***
N	660	660	657	658

*p < 0.10, **p < 0.05, ***p < 0.01, ^a Standard errors are in parentheses, ¹Log of number of employees, ²Coded 0= Output, 1=Throughput, ³ French & Fama 49 industry categories.

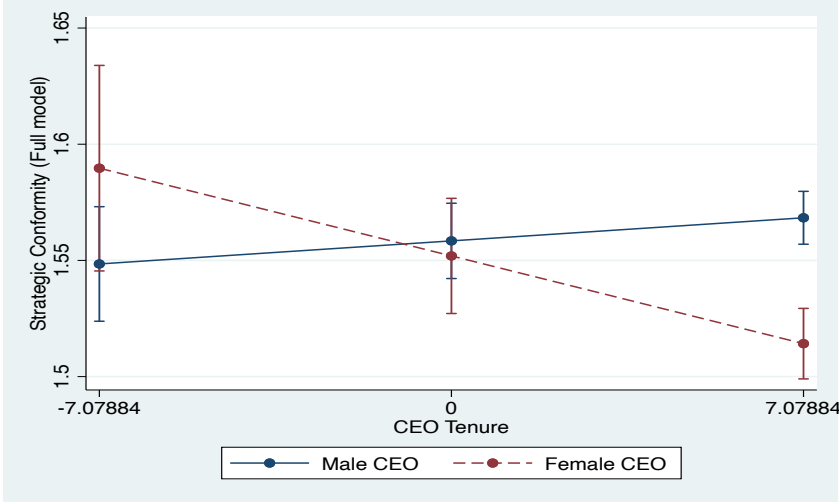
Figure 10: The Effects of CEO Tenure and Female CEOs on Strategic Change ^{a b}



^a CEO tenure (at -1 and +1 s.d.)

^b Full composite model of strategic change is used.

Figure 11: The Effects of CEO Tenure and Female CEOs on Strategic Conformity ^{a b}



^a CEO tenure (at -1 and +1 s.d.)

^b Full composite model of strategic conformity is used.

5.6 Chapter Summary

Chapter V presented the results of the data analysis in five main sections. First, I present the descriptive statistics (means, standard deviations) and correlations of the study's variables along with the tests of the main effect predictions. The second section presents the results of the empirical tests for the moderating hypotheses. In the third section, I present the results of the robustness checks pertaining to the alternative operationalizations for strategic change and strategic conformity. In the fourth section, I present the results of the robustness checks pertaining to an alternative endogeneity correction (residuals). The fifth section presents the results of the supplemental analysis on two additional moderating variables (CEO tenure and board independence) on strategic change and strategic conformity. Additionally, in Table 23 above, I summarized the overall findings of the study noting which hypotheses were supported and not supported. Finally, in Tables 30 and 43, I presented the summary findings of the robustness checks pertaining to alternative measurements of two outcome variables (i.e., strategic change and strategic conformity) and an alternative endogeneity correction (residuals), respectively. In the next chapter, I will discuss these findings in depth and highlight the major scholarly and practical implications of the dissertation. Finally, I conclude with a discussion of the limitations of the study as well as future research avenues.

CHAPTER VI

DISCUSSION AND CONCLUSION

In this chapter, I present an in-depth discussion of the study's findings and its implications for scholars and practitioners (managers). The chapter is organized into four main sections. First, I provide a discussion of a summary of key findings in this study. Second, I discuss the scholarly implications of this study summarized under specific themes. In the third section, I provide a discussion of the study's implications for practice. Finally, the limitations and future research directions are discussed.

6.1 Summary of Key Findings

This dissertation examines whether and under what conditions female CEOs differ from their male counterparts in their strategic choices. Specifically, I investigate the possibility that female CEOs, compared to their male counterparts, pursue aggressive strategic actions such as strategic change and organizational innovation, thereby adopting a more "hawkish" posture. Conversely, I explore an alternative scenario in which female CEOs, compared to their male counterparts, engage in more strategic conformity (i.e., the extent that the firm's strategy closely follows the industry's profile). In particular, I argue that female CEOs emphasize less aggressive corporate strategies that conform to stakeholders' expectations, thereby adopting a more "dovish" posture. The aforementioned alternative predictions ('hawkish' vs. 'dovish' strategic

postures), along with a number of executive, organizational, and industry boundary conditions, are empirically tested using a panel dataset of U.S. firms.

Several key findings can be observed from the empirical analyses. First, I found that female CEOs, compared to their male counterparts, engage in more strategic change (but not necessarily strategic conformity). Further, this finding is moderated by strong past performance, consistent with other studies in the literature. However, unlike prior findings, I observed that female CEOs hired from outside the firm do not engage in greater strategic change. Similarly, predecessor CEO dismissal does not seem to increase the propensity of female CEOs to engage in strategic change. Second, I found that female CEOs, compared to their male counterparts, engage in more organizational innovation (as measured in new product introductions or NPIs). Additionally, this relationship is stronger if the firm has a higher proportion of female directors on the board and the predecessor CEO was dismissed.

Finally, to gain further insights into the contingency factors around female CEOs' attitude toward the status quo, I performed a supplementary analysis. Overall, the findings of the supplemental analysis show that female CEOs tend to engage in more strategic conformity (and less strategic change) when the board is independent. In addition, female CEOs tend to engage in less strategic conformity (and more strategic change) even during later stages of their tenure. In the following section, I discuss the major insights generated from this study and how they contribute to research in corporate governance, strategic change, and organizational innovation.

6.2 Implications for Research

This study has a number of implications for management research. First, the findings, contexts, and theories used in this study contribute to corporate governance, strategic change and, organizational innovation literatures in several ways.

Scholars argue that even though we have been studying CEOs for more than 40 years, the scholarly treatment of CEOs and related findings are fragmented and problematic (Busenbark, Krause, Boivie, & Graffin, 2016). The rationale behind this argument is that research that only examines CEOs as individuals (e.g., personality, traits) without considering the position (e.g., decision-making) and the environment (e.g., external perceptions of the CEO) they operate within is incomplete and lacks the big picture. Hence, Busenbark et al. (2016) proposes a “configurational perspective” where three commonly used domains in CEO research (i.e., position, person, environment) should be theoretically and empirically integrated. Although these scholars admit that it may be very difficult to integrate these three domains in to one study empirically, researchers can still utilize interrelated theories from each of the domains rather than from just one (Busenbark, et al., 2016). Hence, the current study is a unique example of using interrelated theories to explain female CEOs’ risk-taking attitudes and decision-making in various contexts. Specifically, this study used the theoretical synergy among socialization, stereotype threat, and expectancy violation theories to examine whether and under what circumstances female CEOs differ from their male counterparts in initiating strategic change, strategic conformity, and organizational innovation. I believe that while the focus on female CEOs’ risk-taking attitudes explores the “person” aspect of CEO research, the emphasis on decision-making under certain conditions and socialization agents provide insights into the

“position” and “environment” aspects of CEO research, respectively. Hence, this study contributes to management scholars’ understanding of configurational CEO research (Greckhamer, 2016; Busenbark, et al., 2016) in unpacking a complex relationship.

Additionally, this study’s findings lend support to the interrelated theories and perspectives used in this study. For example, the finding that female CEOs, compared to their male counterparts, engage in more strategic change and organizational innovation corroborates the tenets of stereotype threat theory (Steele, 1997; Inzlicht & Schmader, 2012) and expectancy violation theory (e.g., Jussim et al., 1987). As aforementioned, both overcoming the gender stereotypes and violating the expectations of in-group members requires female CEOs to be bold risk-takers. Existing research on the link between female managers/leaders and risk-taking behavior is fragmented. While some scholars find female leaders are less risk-tolerant than their male counterparts (e.g., Levi et al., 2014; Perryman, Fernando & Tripathy, 2016; Faccio, Marchica, & Mura, 2016), others have shown that female leaders are more risk-tolerant than their male counterparts (e.g., Berger, Kick, & Schaeck, 2014; Adams & Funk, 2012; Mukarram, Ajma, & Saeed, 2018). Several researchers (e.g., Sila, Gonzalez, & Hagendor, 2016) did not find a significant relationship between female leaders and risk-taking attitudes. Overall, the findings of this study support the argument that female leaders, in fact, tend to be greater risk-takers as compared to their male counterparts. However, it is important to note that I use the sex of the CEOs as my proxy measure for risk-taking behaviors. Although this measure is not an ideal proxy for risk-taking attitudes, due to the difficulty in obtaining primary data from CEOs, past research has been relying on this proxy measure. Also, it is important to note that this study is the first to explore female CEOs’ risk-taking behaviors (compared to male CEOs’ risk-taking

behaviors) in the context of strategic change, strategic conformity, and organizational innovation while examining five executive, organizational, and industry conditions.

Are female CEOs ‘hawkish’ or ‘dovish’? Propensity to engage in strategic change and conformity

The finding that female CEOs, compared to their male counterparts, engage in more strategic change has important implications for both corporate governance and strategic change literatures. This finding is consistent with my assertion that female CEOs engage in a counter-stereotypical attitude where they choose to resist the expectations and demands of socialization forces (e.g., directors, top management team members). Literature in stereotype threat consistently argues that out-group members (female CEOs in this case) tend to be more vigilant in identifying the identity-threat cues (Chisik, 2015; Stapel & Koomen, 1998) and make conscious efforts to either disprove or affirm such cues (e.g., think-manager-think-male, sexist comments on female leadership, etc.). Consequently, following the arguments in stereotype threat theory and empirical research, the more women experience identity threats, the more they display agentic behavior and outperform their male counterparts in male-dominated leadership roles (Bergeron, Block, & Echtenkamp, 2006). Additionally, this finding corroborates the past research on risk-taking tendencies of female leaders/managers. Although the research findings on the link between female leadership and risk-taking behavior are inconclusive, several scholars found that women are more risk-tolerant than their male counterparts (Adams & Funk, 2012; Berger, et al., 2014; Adams & Ragunathan, 2017; Mukarram et al., 2018). For example, Adams and Funk (2012) found that female directors are less tradition and security-oriented as well as

more risk-loving than their male counterparts. Hence, the authors concluded that having a female director on the board does not result in more risk-averse decisions.

Contrary to my alternative predictions, the results show that female CEOs do not pursue strategic conformity compared to their male counterparts. This finding is contrary to what I hypothesized and my predictions that female CEOs may choose to be more conducive to the socialization agents and not fight the status quo and, as a result, engage in more strategic conformity. Existing research has shown that, historically, female leaders receive less support from the socialization agents within a firm (McDonald et al., 2018; Glass & Cook, 2016; Ryan & Haslam, 2007). For example, McDonald et al. (2018) found that white male executives tend have negative, gender stereotype biases about the leadership capabilities of female (and racial minority) CEOs and, as a result of such biases, they “hold less favorable views of the overarching strategy that a new minority-status CEO is pursuing” (p. 9). Although the finding that female CEOs do not engage in strategic conformity is contrary to my prediction, it confirms my argument that female CEOs engage in a counter-stereotypical attitude in the face of an identity threat. This finding also creates a consistent narrative around female CEOs’ risk-taking attitudes and a tendency toward change when all else is equal. In addition, to understand the contingency factors around their counter-stereotypical attitude, I have also tested five moderating variables (proportion of female directors, predecessor CEO exit, CEO outsider status, industry dynamism, and past firm performance) on the relationship between female CEOs and strategic conformity and strategic change. However, none of the moderating hypotheses are supported for strategic conformity. On the other hand, the moderating effect of past firm performance and

female CEO status on strategic change is supported. In the following sub-section, I discuss the implications of this finding.

6.2.1 Past Firm Performance as a Driver of Strategic Change

The findings also indicate that past firm performance is a significant moderator between female CEOs and strategic change. This finding suggests that female CEO-led firms engage in less strategic change following strong past performance. In fact, this finding is consistent with past literature suggesting that while declining financial performance leads to strategic change (Nakauchi & Wiersema, 2014; Barker & Duhaime, 1997) and increased stakeholder pressure on strategic leadership regarding the firm's current strategy (Pajunen, 2006), prospect theory argues that strong performance results in heightened levels of risk-aversion (Holmes, Bromiley, Devers, Holcomb, & McGuire, 2011). Engaging in strategic change in times of strong performance would be considered a risky move, as it requires a re-allocation of existing resources and support of the socialization agents with the firm. Thus, it is possible that female CEOs are hesitant to further challenge the status quo and, as a result, commit to the existing firm's strategies. It is important to note that 'good past firm performance' can be considered one of the circumstances in which a hawkish female CEO with a counter-stereotypical attitude may choose to act in a dovish way.

6.2.2 Do outsider female CEOs engage in more strategic change?

There has been a scholarly debate as to whether outsider CEOs engage in more or less strategic change (e.g., Zhang and Rajagopalan, 2010; Bailey and Helfat, 2003; Boeker, 1997). Specifically, while several scholars have found that corporate boards appoint outsider CEOs when they seek a strategic change (e.g., Hilger, Mankel and Richter, 2013; Cannella and

Lubatkin, 1993; Wiersema, 1992), others argue that outsider CEOs' change efforts may be challenged by various factors (e.g., Karaevli and Zajac, 2013). For example, Wiersema (1992) found that firms have a greater likelihood of engaging in changes in their diversification strategy when they have a new outsider CEO rather than a new insider CEO. On the other hand, Karaevli and Zajac (2013) found that the presence of newly appointed outsider CEOs are not the seldom reason for post-succession strategic change. However, authors have shown that contingency factors such as ordinary successions and long-tenured predecessor CEOs may enable outsider CEOs to initiate strategic change.

The findings of this study suggest female CEOs tend to engage in less strategic change when they hold outsider status. Although this finding is contrary to my initial predictions, it contributes to the existing debate about the effect of CEO outsider status on strategic change. In fact, this study is the first to explore the impact of female CEO's outsider status on strategic change.

One way to interpret this intriguing finding lies with understanding the dilemma female CEOs face given the contradiction between their risk-taking attitudes and need to conform to formidable socialization agents (e.g., board of directors, executives, activist shareholders). Specifically, under certain conditions, female CEOs may have to adjust their risk-taking attitudes to effectively navigate a socialization process. One such condition may be to hold outsider status. The finding that female CEOs, compared to their male counterparts, engage in less strategic change when they are outsiders supports the tenets of socialization theory (Van Maanen, 1978). Proponents of this theory suggest that newcomers are transformed from outsiders into engaged, effective members of an organization as organizational norms and roles are transmitted and

reinterpreted from one occupant to another (Van Maanen and Schein, 1977). It is important to note that the socialization process for female CEOs is more complex compared to their male counterparts. Hence, female CEOs, during the post-succession stage, may overtly experience resentment from socialization agents and become more willing to commit to existing strategies that these agents have once diligently formulated. On the flip side, it is plausible to expect that male CEOs compared to their female counterparts receive the benefit of the doubt when they are appointed as outsider CEOs. However, I interpret female CEOs' conformity as a carefully crafted strategic move rather than a blind submission to the will of the socialization agents. Specifically, I posit that a female CEO may feel that going against the 'stream' and challenging the status-quo may jeopardize her strategic vision for the firm and her career in the long term. Hence, she may choose to commit to the existing strategies until she establishes herself as a credible leader and gain the trust of the socialization agents. Additionally, it is possible that female CEOs choose to hold back on their "inner fire" to launch change during their early tenure and wait until they pass the 'new outsider CEO' phase of their tenure. Such an attitude can also be seen as winning by losing.

6.2.3 Female CEOs and Organizational Innovation

Another key finding of this study is that female CEOs, as compared to their male counterparts, engage in more organizational innovation (particularly as measured in NPIs). Contrary to my predictions, this relationship is not significant when innovation is operationalized as R&D intensity.

There has been a limited amount of research on the effects of female executives (Dezso & Ross, 2012) and board gender diversity (e.g., Griffin, Li, & Xu, 2021; Mukarram, Ajmal, &

Saeed, 2018; Galia & Zenou, 2012; Miller & Triana, 2009) on organizational innovation. For example, using upper echelon theory and perspectives of gender in organizations, Dezsó and Ross (2012) found that female executives in TMTs improve firm performance when they formulate the firm's strategy with a focus on innovation (measured as R&D intensity). It is important to note that Dezsó and Ross (2012) excluded the female CEOs from their "female TMT measure" when conducting their study. The rationale for such exclusion lies in the fact that CEOs tend to have the ultimate structural position and power over decisions (Dezsó & Ross, 2012). Although this study's findings are very valuable, a gap exists in the literature in terms of female CEOs' influence over organizational innovation activities. Thus, applying unique theories to the female CEO leadership context, I believe the current study not only provides intriguing findings but also fills a significant void in the link between female CEOs and organizational innovation.

In addition, the finding that female CEOs, as compared to their male counterparts, engage in more organizational innovation through NPIs supports the existing literature's stand on female leaders' risk-taking behaviors which is consistent with the tenets of expectancy violation theory (Jussim et al., 1987). The proponents of this theory (Burgoon, 1985; Jussim et al., 1987) argue that out-group members, female CEOs in this case, who show attitudes outside of their prescribed social roles will be perceived and evaluated as violating their out-group characteristics (e.g., communal, cooperative, risk-averse). For instance, if employees from certain ethnic minority groups perform better than their Caucasian colleagues, they may be rewarded more because they violated the implicitly held belief and expectation that they don't perform as well. Support for this argument has been extensively documented in a series of studies of minority

educational achievement (Inzlicht and Shmader, 2012; Spencer et al., 1999; Steele and Aronson, 1995). However, such evaluations and perceptions of out-group members may sometimes result in favorable outcomes. In this study, I have provided empirical evidence that female CEOs can gather the necessary support from socialization agents when engaging in organizational innovation (i.e., launching NPIs).

6.2.4 Female Directors as Enablers of Female CEO Leadership

The findings in this study show that female CEOs engage in more organizational innovation through launching NPIs when there is a high proportion of female directors on the board. This finding confirms my predictions that female CEOs may feel psychologically safer and receive internal support (Konrad et al., 2008) when there are more female directors on the board. As a result, female CEOs face less identity threat and feel more emboldened when engaging in innovative activities. In fact, past and recent research shows that the presence of board gender diversity leads to organizational innovation (Griffin, Li, & Xu, 2021; Mukarram, Ajma & Saeed, 2018; Chen, Ni, & Tong, 2016; Galia & Zenou, 2012; Torchia et al., 2011; Miller & Triana, 2009). For example, lending support to the critical mass perspective, Torchia et al. (2011) found that having a critical mass of women directors on boards results in higher levels of firm innovation. Using firm patents across 45 countries, Griffin et al. (2021) found that corporations with board gender diversity generate more novel patents with higher innovative efficiency. In addition, the authors showed that female director representation is associated with more innovative corporate cultures and more diverse inventors. Although existing research provides evidence that gender-diverse boards lead to organizational innovation in various contexts, the finding that female CEOs engage in more organizational innovation through

launching NPIs when there is a high proportion of female directors on the board is new and unique. This study is the first of its kind to examine the relationship between female CEOs and organizational innovation when there are high levels of female director representation.

Does predecessor CEO dismissal provide a mandate for organizational innovation?

The findings show that female CEOs engage in more organizational innovation (i.e., NPIs) when the predecessor CEO is dismissed rather than leave voluntarily. This finding is consistent with past research. Specifically, existing scholarly works have been documenting the consequences of CEO turnovers on firm innovation (Winter & Szulanski 2001; McGrath, 2001; Cao, Maruping, & Takeuchi, 2006; Bereskin & Hsu, 2012) and firm performance (Wiersema & Bantel 1993; Levinthal & March 1993). For example, research shows that firms that dismiss (i.e., fire) their CEOs are found to perform worse than firms that engage in usual succession events from voluntary exits (Wiersema, 1995). It is expected that firms experiencing a CEO dismissal will appoint a new CEO who can clean the acts of the predecessor CEO and steer the firm in the right direction. Hence, predecessor CEO dismissals will provide the right setting and context for the new CEO to innovate as they are often brought on to be change agents. Accordingly, this finding confirms my assertion that female CEOs will demonstrate a counter-stereotypical attitude when engaging in risky choices and innovation especially in their early tenure.

Additionally, this finding can be interpreted in the context of Hambrick and Fukutomi's (1991) work "the seasons of a CEO's tenure". Hambrick and Fukutomi (1991) propose that CEOs experience discernable seasons/phases during their tenure in office. These authors further argue that these seasons contribute to executive decision making through behaviors and attention, which in turn affects firm performance. The first season of a CEO's tenure is 'response

to mandate'. It is proposed that new CEOs, upon entering their roles, often commit their energy to addressing the mandate or pressure coming from the boards of directors. "The mandate, usually more implicit than explicit, is a message to the new CEO concerning the magnitude, direction, and pace of change that is expected" (Vancil, 1987: 261). In this first phase, CEOs devote their attention to generating a positive track record and legitimacy through committing to their paradigm, using various information sources, and showing high interest in the position. Given that new CEOs tend to have low power in their early tenure (Hambrick and Fukutomi, 1991), replacing a dismissed CEO provides favorable conditions to prove themselves change agents and further develop their track records on the job. Hence, predecessor CEO exits (i.e., dismissal) may help new CEOs rally support for their innovation strategies and activities.

6.3 Implications for Practice

In addition to the scholarly contributions, this study's findings have several managerial implications. First, findings support the existing research on the importance and value of greater board gender diversity. For example, female CEOs may feel more validated and empowered when there is a greater representation of female directors on the board. Specifically, female directors may act as catalysts in promoting and validating female CEOs. Existing research found that female director representations on corporate boards result in a greater likelihood of female CEO appointments (Gupta and Raman, 2014; Elsaid and Ursel, 2011). In addition, female directors may positively affect the socialization process of female CEOs through engaging in greater information sharing, decreased stereotype threat, and a heightened level of influence within the board (Elstad and Ladegard, 2012). Consequently, analyzing interviews of corporate board members, research has found that female directors (and CEOs) tend to include

each other to avoid being isolated while acting as a ‘sounding board’ for one another during board deliberations (e.g., Konrad, Kramer, and Erkut, 2008).

In addition, the findings suggest that some of the widely held gender-role-driven assumptions about female CEOs’ risk-taking attitudes and decision-making are misguided. A closer look into the existing scholarly works on female leaders’ risk-taking behaviors and strategic decision-making shows significant variability depending on contexts and conditions. For example, while male CEOs engage in more acquisitions and issue debt more often than female executives (Huang & Kisgen, 2013), female CEO-led firms have lower leverage, less volatile earnings, and a greater chance of survival than otherwise similar firms led by male CEOs (Faccio et al., 2014). Additionally, this study’s findings show that female CEOs tend to engage in more strategic change, organizational innovation, and not necessarily in strategic conformity. Although these findings show different risk-taking and decision-making attitudes among female versus male CEOs in varying contexts, the predominant narrative portrays males as risk-takers and females as risk-averse.

Consequently, one of the many erroneous assumptions made about female leaders is that they do not have the courage to make “tough” decisions. Contrary to such arguments, Mary Barra, Chairwoman and CEO of General Motors, represents a great example of change and organizational innovation. Mary Barra demonstrated her fearlessness by making tough decisions such as cutting GM’s workforce, close plants that produced models with slow-sells, and being willing to take political blowback, among others. Barra says she made these decisions to make sure “GM is lean and agile to get in front and lead in autonomous and electric vehicles”

(Naughton, 2018). In fact, Moody's found GM's restructuring effort, particularly the focus on electric vehicles, and innovation “credit-positive” (Naughton, 2018, para. 1).

It is evident that gender-stereotype and bias are pervasive within corporate corridors and media circles. Accordingly, it is imperative that corporate boards and shareholders are informed with scholarly evidence that female leaders' risk-taking behaviors are context-dependent and that they tend to take “smart risks.” For example, the current study found that female CEOs engage in less strategic change when the firm's performance is strong. In addition, female CEOs tend to engage in more organizational innovation when the predecessor CEO is dismissed. Being the successor of an ousted CEO is likely to provide female CEOs with the right time and conditions to engage in more organizational innovation, even during their early tenure and with potentially skeptical socialization agents (e.g., the board, media, analysts). On the other hand, findings show that hiring female CEOs from outside the firm does not uniformly lead to strategic change. Consequently, these findings may play important roles in informing corporate boards and shareholders in making CEO succession decisions as well as female CEO performance evaluations.

6.4 Limitations and Future Research Directions

Despite several intriguing findings, this study is not without limitations. First, the study uses CEO gender as a proxy for understanding executive decision-making and risk-taking attitudes. Some may argue that this could create a construct validity issue as the female CEO variable measures the gender of a CEO, but not necessarily his/her decision-making tendencies. Although this concern is valid, the majority of corporate governance research is conducted using the CEOs' observable attributes as proxy variables rather than surveying CEOs' underlying

attitudes and decision-making tendencies. However, it is important to note that the use of such proxies is not necessarily motivated by convenience but by the difficulty in directly surveying CEOs. Hence, future scholars can address this issue by conducting a qualitative and/or survey research design to better understand the underlying dynamics of executive decision-making and risk-taking attitudes.

Another limitation of this study is the generalizability of the findings in different settings and contexts. Although I used the Standard & Poor's 1500 (S&P 1500) index to capture firms from different indices (S&P 500, smallCap, mediumCap), which represent approximately 90% of U.S. market capitalization, the use of a matched sample (male vs. female CEOs) greatly reduced overall sample (665 firm-years) in this study. Accordingly, such a small sample may not be fully representative of firms of varying size and age. For example, this could potentially reduce the generalizability of my findings to small and/or entrepreneurial firms. Future research should examine female (versus male) CEOs of entrepreneurial firms and their strategic choices. It is possible that female CEOs of smaller entrepreneurial firms may not only face less pressure from socialization agents compared to female CEOs of large, publicly traded firms but also engage in more organizational innovation and strategic change initiatives. In addition, using the two-stage Heckman endogeneity correction might not address the omitted variables bias I may have in this study. To address this, I have tested my hypotheses using an alternative endogeneity correction (residuals) and present the results in the robustness section of this study.

Finally, the use of new product introductions (NPIs) to measure organizational innovation may raise some questions. Specifically, it is important to note that the NPI measure in this study does not distinguish between types of innovation (i.e., explorative/radical and

exploitative/incremental innovations), and only focuses on the aggregate number of new product introductions. Given the significant findings that female CEOs, compared to their male counterparts launch more NPIs, it would be interesting to explore whether they initiate more explorative or exploitative innovations. Finally, this study examines whether female CEOs, compared to their male counterparts, engage in more strategic change (or strategic conformity) in order to understand their risk-taking attitudes; however, future research can further explore female CEOs' decision-making in the context of strategic deviance where firms deviate from industry norms in formulating strategies.

6.5 Conclusion

This dissertation empirically examines whether and under what conditions female CEOs differ from their male counterparts in their strategic choices. Specifically, I explore whether female CEOs, compared to male counterparts, engage in more strategic change, strategic conformity, and organizational innovation. I further investigate the boundary conditions of these relationships by incorporating executive, organizational, and industry level moderators. The findings suggest that female CEOs, compared to male counterparts, engage in more strategic change, but not in strategic conformity. Further, the relationship between female CEOs and strategic change is shaped by past firm performance whereby female CEOs engage in less strategic change following strong firm performance. Additionally, the findings indicate that female CEOs, compared to their male counterparts, engage in more organizational innovation. Furthermore, the findings show that female CEOs launch more NPIs when there is a higher proportion of female directors on the board. Another condition that affects the relationship between CEOs and NPIs is predecessor CEO exit (voluntary departure vs. dismissal). The

findings in this study show that female CEO-led firms launch more NPIs if the predecessor CEO was dismissed. Overall, these findings contribute to the ongoing research in corporate governance, strategic change, and organizational innovation.

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APPENDIX

APPENDIX

Variance Inflation Factor

	VIF	1/VIF
Prop. of Female Directors	1.818	.55
Inverse Mills ratio	1.715	.583
CEO Tenure	1.348	.742
Board Size	1.335	.749
Female CEO	1.316	.76
Unabsorbed Slack Resources	1.283	.779
Firm Age	1.198	.835
CEO Outsider Status	1.148	.871
Industry Dummies	1.145	.873
CEO Duality	1.136	.88
Predecessor CEO exit	1.123	.891
CEO Output Background	1.105	.905
Firm Size	1.088	.919
Past Firm Performance (ROA)	1.058	.945
Prop. of Female Executives	1.058	.945
Board Independence	1.055	.948
Industry Dynamism	1.046	.956
Mean VIF	1.234	

Stage 1: Probit Model of Female CEO Presence

	Coefficients	Standard Error
Board Diversity	0.64 ***	.609
Female Legislators	-0.17 **	.01
Female Labor Participation	0.01	.001
Industry Political Leaning	-1.02	.116
Firm size	-0.02 ***	.001
Firm age	.02	.001
Constant	-6.02***	.305
Pseudo r-squared	0.171	N=665
Chi-square	444.70	Prob > chi2

*** p<.01, ** p<.05, * p<.1

BIOGRAPHICAL SKETCH

Hazel Husne Dadanlar holds a Bachelor of Science degree in Finance from Marmara University in 2006. She received her MBA degree (Beta Gamma Sigma) from the University of Texas-Pan American (now the University of Texas Rio Grande Valley) in 2013. She then earned her Ph.D. in management with an emphasis in strategic management from the University of Texas Rio Grande Valley in 2021. She has received several awards and honors, including the prestigious Jess Hay Endowment for Chancellor's Graduate Student Research Fellowship granted by The University of Texas System and the Best Emerging Researcher Award granted by the Department of Management at Ohio University. Her general research interest falls in the areas of intersecting disciplines such as strategic management, international business, and entrepreneurship. Specifically, her research passion lies with corporate governance and strategic leadership and their effects on various corporate strategies and social issues in management. Her scholarly works have appeared in prestigious journals, including Human Relations (Financial Times Top 50 Journal) and Journal of Business Research. Her experience includes holding several managerial positions in a non-profit education foundation in Turkey (2006-2010) and working for the New York Community Bank as a financial services associate in Phoenix, AZ. Hazel H. Dadanlar is now a visiting assistant professor of strategic management & entrepreneurship at Ohio University's College of Business. She can be reached at dadanlar@ohio.edu or hdadanlar@gmail.com.